UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF MICHIGAN

UNITED STATES OF AMERICA,

Plaintiff,

and

NATURAL RESOURCES DEFENSE COUNCIL, INC. AND SIERRA CLUB,

Intervenor-Plaintiffs,

v.

DTE ENERGY COMPANY AND DETROIT EDISON COMPANY,

Defendants.

Civil Action No.
2:10-cv-13101-BAF-RSW

Judge Bernard A. Friedman

Magistrate Judge R. Steven Whalen

DEFENDANTS' MEMORANDUM OF LAW IN SUPPORT OF MOTION *IN LIMINE* TO EXCLUDE THE OPINIONS OF ROBERT H. KOPPE AND RANAJIT SAHU

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EXHIBIT 1
TO DEFENDANTS' MEMORANDUM OF LAW IN SUPPORT OF MOTION *IN LIMINE* TO EXCLUDE THE OPINIONS OF ROBERT H. KOPPE AND RANAJIT SAHU

IN THE UNITED STATES DISTRICT COURT
FOR THE NORTHERN DISTRICT OF ALABAMA
SOUTHERN DIVISION

UNITED STATES OF AMERICA,	)	
Plaintiff,	)	
	)	
ALABAMA ENVIRONMENTAL COUNCIL,	)	
	)	
Plaintiff-Intervenor	)	
v.	)	**Civil Action No. 2:01-CV-152-VEH**
	)	
ALABAMA POWER COMPANY,	)	
	)	
Defendant.	)	

MEMORANDUM OPINION

This case is presently before the Court on Defendant Alabama Power Company's ("Alabama Power") Motion in Limine to Exclude on *Daubert* Grounds (doc. 292). Plaintiffs filed a response (doc. 319) to which Alabama Power replied (doc. 349). On December 29, 2010, the Court granted Plaintiffs until January 11, 2011, to set out their position on whether or not Gorgas Unit 10 is a baseload unit as delineated in *United States v. Cinergy Corp.*, 623 F.3d 455 (7th Cir. 2010). (Doc. 351). Plaintiffs filed a response to this Order (doc. 360) and a statement of additional evidence (doc. 366) to which Alabama Power replied (doc. 367). A hearing was held on this motion on February 18, 2011. At this time, the Court will only address Alabama Power's Motion insofar as it relates to Mr. Robert H. Koppe ("Koppe") and

Dr. Ranajit Sahu ("Sahu"). For the reasons explained below, Alabama Power's Motion in Limine relating to Koppe and Sahu is due to be granted.

I. STANDARD

While Federal Rules of Evidence 401 and 402 provide for the liberal admission of relevant evidence, Rules 403, 702, and 703 mitigate against this general policy by giving trial courts the discretion to exclude expert testimony that is either unreliable or irrelevant. *See Allison v. McGhan Med. Corp.*, 184 F.3d 1300, 1310 (11th Cir. 1999). The Eleventh Circuit has held that scientific expert testimony is admissible when:

> (1) the expert is qualified to testify competently regarding the matters he intends to address; (2) the methodology by which the expert reaches his conclusion is sufficiently reliable as determined by the sort of inquiry mandated in *Daubert*; and (3) the testimony assists the trier of fact, through the application of scientific, technical, or specialized expertise, to understand the evidence or to determine a fact in issue.

Cook v. Sheriff of Monroe Cnty., 402 F.3d 1092, 1107 (11th Cir. 2005) (quoting *United States v. Frazier*, 387 F.3d 1244, 1260 (11th Cir. 2004)). The proponent of the expert testimony bears the burden of laying the proper foundation for the admission of the expert testimony, and admissibility must be shown by a preponderance of the evidence. *Id.*

In *Daubert v. Merrell Dow Pharmaceuticals Inc.*, 509 U.S. 579 (1993), the

Supreme Court imposed a special duty upon trial judges pursuant to Rule 702, requiring the judge to act as a "gate-keeper" and ensure that scientific evidence is both reliable and relevant before it is admitted. *Id.* at 589. The *Daubert* Court set out four nonexclusive factors which should be considered by a trial court assessing the reliability of expert scientific testimony under Rule 702: (1) whether the theory or technique is capable of being tested; (2) whether the theory or technique has been subjected to peer review and publication; (3) whether the technique has a high known or potential rate of error; and (4) whether the theory has gained general acceptance within the scientific community. *Daubert*, 509 U.S. at 593-94. Other factors which have been considered in conducting a *Daubert* analysis include "reliance on anecdotal evidence (as in case reports), temporal proximity, and improper extrapolation (as in animal studies)." *Allison*, 184 F.3d at 1312.

A *Daubert* inquiry focuses on the principles and methodology underlying expert opinion testimony, not on the conclusions they generate. *Id.* (*citing Daubert*, 509 U. S. at 595). However, testimony based solely on the experience of the expert is not admissible. *Rider v. Sandoz Pharm. Corp.*, 295 F.3d 1194, 1197 (11th Cir. 2002). The court must be sure that the expert "employs in the courtroom the same level of intellectual rigor that characterizes the practice of an expert in the relevant field." *Id.* (quoting *Kumho Tire Co., Ltd. v. Carmichael*, 526 U.S. 137, 157 (1999)).

Accordingly, the proponent of the testimony does not have the burden of proving that the testimony is scientifically correct, but that it is reliable. *Allison*, 184 F.3d at 1312. However, the conclusions reached and the methodology used to reach them are not "entirely distinct from one another." *Joiner*, 522 U.S. at 146. Often, experts will extrapolate from already existing data. *Id.* "But nothing in either *Daubert* or the Federal Rules of Evidence requires a district court to admit opinion evidence which is connected to existing data only by the *ipse dixit* of the expert. A court may conclude that there is simply too great an analytical gap between the data and the opinion proffered." *Id.* This scientifically valid connection between the opinion and the facts also has been called "analytical fit." *Rider*, 295 F.3d at 1197.

II. BACKGROUND

A. Initiation of the Action

On August 7, 1980, the Environmental Protection Agency ("EPA") issued regulations implementing the New Source Review ("NSR") provisions of the Clean Air Act. 45 Fed. Reg. 52675 (1980). Under those regulations, existing sources of air pollution were not required to install the state-of-the-art pollution controls mandated of new sources. *Ala. Power Co. v. Costle*, 636 F.2d 323, 400 (D.C. Cir. 1979). The grandfathering of existing sources was not a perpetual immunity from the NSR requirements; existing plants are required to install modern pollution controls if they

undergo any physical or operational change that would result in a significant net emissions increase. 42 U.S.C. § 7475(a); Ala. Admin. Code r. 335-3-14-.04(1)(a).

The Attorney General of the United States, acting at the request of the Administrator of the EPA and through the United States Attorney for the Northern District of Alabama, filed this action against Alabama Power, a wholly owned subsidiary of The Southern Company ("Southern").[1] (Doc. 1). The EPA originally sued Alabama Power and others on November 12, 1999, in the Northern District of Georgia, Case No. 99CV2589. That action was dismissed against Alabama Power on the grounds of lack of *in personam jurisdiction*, and refiled in this District on January 12, 2001.[2]

The EPA alleged that Alabama Power constructed new, or made modifications to, existing, coal-fired, steam driven electrical power generating plants Alabama Power operates in Alabama in violation of the Clean Air Act. (Doc. 127 at ¶ 1). The EPA alleged that Alabama Power commenced maintenance, repair, and replacement activities between 1985 and 1997 that were not "routine," but were "major

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[1] After obtaining leave of court, the EPA filed an Amended Complaint on February 17, 2005. (Docs. 119-121).

[2] On May 29, 2001, the Court granted the parties' joint stipulation permitting the Alabama Environmental Council ("AEC") to intervene. (Doc. 13). The Court refers collectively to the EPA and the AEC as "Plaintiffs."

modifications" of those plants. *Id.* at ¶¶ 64-67; *see* Ala. Admin. Code r. 335-3-14-.04(2)(b). The EPA alleged that Alabama Power failed to obtain NSR permits in violation of the Prevention of Significant Deterioration ("PSD") provisions of the Act, 42 U.S.C. §§ 7470-92, and that Alabama Power violated Alabama's State Implementation Plan ("SIP"). (Doc. 127 at ¶¶ 70-83). The EPA asserted that, as a result of Alabama Power's operation of the power plants following this construction and modification without the proper permits, massive amounts of sulfur dioxide ("SO_2") and nitrous oxides ("NO_x") have been, and are still being, released into the atmosphere. *Id.* at ¶ 2. Of the units initially at issue, the parties have resolved or dismissed all claims other than the following: Barry Unit 2 (replacement of reheater); Gorgas Unit 10 (balanced draft conversion); and Greene County Unit 2 (replacement of primary reheater). All of these units are coal-fired units

B. Operation of the Southern System

Southern Company consists of five system utilities: Alabama Power, Georgia Power Company, Gulf Power Company, Mississippi Power Company, and Southern Power Company. (Doc. 370, Tr. 128). Southern Company Services, owned by Southern Company, manages the generating fleet of those five utilities. *Id.* at 128-29. The intercompany interchange contract, an operating agreement which is approved and accepted by the Federal Energy Regulatory Commission, binds the five utilities

together to operate as a single electric utility. *Id.* at 129.

Southern Company determines eight days in advance which units to commit or have online. *Id.* at 131-32. When a unit comes online and is synchronized to the computerized system, it must operate at a level that is at least its minimum operating level to prevent it from becoming unstable. *Id.* at 134, 147. The typical standard for a unit's minimum operating level is 40 percent of its maximum capacity. *Id.* at 148. The coal-fired units on the Southern system were all designed to run most efficiently at or close to their maximum capacity. *Id.* The difference between each unit's maximum capacity and its actual generation level is termed spinning reserves. *Id.* at 135. Southern Company is required under Federal Energy Regulatory Commission reliability standards to carry 600 megawatts of spinning reserves at all times.[3] *Id.* at 167-70.

The demand on the system is constantly changing. *Id.* at 149. Southern Company uses a computerized process called automatic generation control to determine in six-second increments whether the generation of the system is equal to

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[3] The reliability standards require Southern Company to carry 1200 megawatts of operating reserves at all times. (Tr. 168). Pursuant to the reliability standards, half of those operating reserves must be online and spinning. *Id.* at 169. The other half can be met with quick start units - units that can be bought online within ten minutes. *Id.* Southern Company has quick start units which are "basically combustion turbines." *Id.* These units are relatively very expensive to operate. *Id.*

the demand on the system. *Id.* at 142-43. If demand on the system increases, Southern Company uses the principles of economic dispatch to determine how much power to obtain from the spinning reserves of each unit in use to meet the increased demand in such a fashion as to minimize cost to its customers. *Id.* at 130. If demand decreases, economic dispatch would tell the company which units to decrease use of in order to minimize cost to its customers. *Id.* at 140-41. Units that respond to these changes in demand are termed load-following units. *Id.* at 141. Gorgas Unit 10, Barry Unit 2, and Greene County Unit 2 have always been operated as load-following units and are kept on automatic generation control. *Id.* at 141-42, 151.

Southern Company's coal-fired units have a minimum time that they must be taken off the system before they can come back online. *Id.* at 151. These times range from 24 hours for the smaller coal-fired units to 72 hours for the larger coal-fired units. *Id.* at 152. Once a coal-fired unit is brought online, it must be left online for a certain number of hours before it is taken off the system in order to stabilize. *Id.* at 154-55. There is no maximum amount of time that a unit may be kept online. *Id.* at 155. When these units were designed it was part of the design feature to recognize that the units cannot be taken off the system at night and brought back online during

the day.[4] *Id.* at 152. All the units at issue here are coal-fired units and have a minimum downtime of between 24 to 72 hours. *Id.* at 152-53.

Southern Company has six units, all nuclear, that are not operated on the automatic generation control system. *Id.* at 174. They are loaded to their full capacity whenever they are available and left there "24 hours a day, seven days a week," because they are the cheapest units in the Southern system. *Id.* at 174-75. Coal-fired units are used to do load-following service because they are more expensive to operate. *Id.* at 175.

III. ANALYSIS

A. Plaintiff's Burden of Proof

The Court has previously explained that Plaintiffs bear the burden of proving, to state a *prima facie* case, that the projects at issue were "major modifications," meaning "a physical change that resulted in a net emissions increase." (Doc. 198 at 39); *see Envtl. Def. v. Duke Energy Corp.*, 549 U.S. 561, 569 (2007). This requirement is based on the Alabama SIP rules applicable in this case, which provide that a pre-construction permit is only required for a "major modification . . . that would result in a significant net emissions increase." Ala. Admin. Code r. 335-3-

[4] Southern Company started adding natural gas-fired combined cycle technology around 2000 which, unlike the coal-fired units, are capable of being shut down at night and brought back online the next morning. (Tr. 152).

14.04(2)(b). "Since the PSD program requires a pre-construction permit in the event of a significant net emissions increase, it is necessary for the utility [] to make a pre-project projection of what actual emissions will be before construction begins." *Envt'l Def. v. Duke Energy Co.*, No. 1:00CV1262, 2010 WL 3023517, at *5 (M.D.N.C. July 28, 2010); (citing *United States v. Ohio Edison Co.*, 276 F. Supp. 2d 829, 865 (S.D. Ohio 2003)).

Under the applicable rule, a "[n]et emissions increase" means an "increase in actual emissions . . . from a particular physical change." Ala. Admin. Code r. 335-3-14.04(2)(c). "[A]ctual emissions" means

> the average rate, in tons per year, at which the unit actually emitted the pollutant during a consecutive 24-month period which precedes the given dat[e] and which is representative of normal source operation. . . Actual emissions shall be calculated using the unit's actual operating hours, production rates, and types of materials processed, stored, or combusted during the selected time period.

Ala. Admin. Code r. 335-3-14.04(2)(u)(1). Further, the Plaintiffs must show that the pre-project projected net emissions increase is greater than the significance threshold. The significance threshold for both NO_x and SO_2 is 40 tons per year. Ala. Admin. Code r. 335-3-14-.04(2)(w).

B. The Koppe/Sahu Methodology

Koppe and Sahu collaborate to provide the heart of the Plaintiffs' case on emissions. Koppe, a power plant reliability engineer, performed the first part of the analysis, estimating how the projects would affect future generation, while Sahu, an environmental permitting engineer, performed the second part of the analysis, converting the increased generation into increased emissions.

Koppe's portion of the analysis can be broken down into two parts: (1) determining the effect of the project on the unit's availability to generate electricity, and (2) determining how much of the increased availability would result in increased generation.[5] (Expert Report of Koppe of Dec. 14, 2009, Doc. 319 Ex. 5 at 2).

With respect to Barry Unit 2 and Greene County Unit 2, Koppe analyzed historical operating data and records to determine the amount of outage hours caused by the problematic component and the condition of the rest of the unit before the project. *Id.* at 7-8. Based on that information, Koppe then exercised his engineering judgment as to the amount of additional hours that each unit would be available to operate in the future because of the projects. *Id.* at 9-10.

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[5] Availability is a universally accepted measure in the electric utility industry of the percentage of time that a unit is ready and able to generate electricity. (Expert Report of Robert Richwine of Feb. 26, 2010, Doc. 319 Ex. 35 at 5). A unit is considered to be available when it is not shut down in forced outages, maintenance outages, or planned outages. *Id.*

In the case of the Gorgas Unit 10 balanced draft conversion, there was not a single component that had deteriorated nor was there a single component that was causing a considerable amount of outage time. *Id.* at 36. Because of the different effect of balanced draft conversion on availability, the method that Koppe used to calculate the other projects' effects on availability would not apply. *Id.* Instead, Koppe looked at other Southern Company units that had been converted, calculating the average fractional reduction in the forced and scheduled outage hours per year that had occurred from pre-project to post-project at those units. *Id.* Koppe then applied these average fractional reductions to the pre-project outage hours at Gorgas Unit 10 during the baseline periods selected by Sahu, resulting in the total expected reduction in outage hours per year. *Id.*

To estimate how much of this additional availability would actually be used, Koppe calculated utilization factors, also known as the output factor, for each unit.[6] *Id.* at 10. Although Koppe concluded that Alabama Power reasonably should have expected that demand for each unit's electricity would increase after the projects,

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[6] A utilization factor is a measure of the fraction of the total potential generation that a unit actually produces, on average, when operating. (Doc. 319 Ex. 5 at 10). The specific measure of utilization used by Koppe is termed the output factor by the industry. *Id.* The output factor for a unit is the ratio of the amount of power the unit actually generated to the amount it could have generated had it always operated at full power whenever it operated at all. *Id.* at 22.

Koppe instructed Sahu to use the historical output factor in his final calculations to isolate the effects of the projects from the effects of demand growth. *Id.* The formula that Koppe used to determine increased generation multiplies the change in availability resulting from the project by the output factor by the maximum output from the unit. (Tr. 17-18).

Sahu then converted the increased generation Koppe had calculated into increased emissions using standard emissions factors for each unit. (Sahu Deposition, Doc. 292 Ex. 15 at 25-26). Sahu concluded that the results of his calculations showed that Alabama Power reasonably should have expected emissions increases greater than the significance threshold for NSR. (Expert Report of Sahu of Dec. 14, 2009, Doc. 319 Ex. 39 at Attach. G).

C. The *Cinergy* Decision

In *United States v. Cinergy Corporation*, 623 F.3d 455 (7th Cir. 2010), the Seventh Circuit, in an opinion by Judge Posner, addressed this same methodology.[7] The court found that the methodology used predicts that an increase in a unit's annual capacity will result in a proportionately equal increase in its output, describing it as stating, "If capacity increased by 10 percent, generation would increase by 10

[7] The part of the analysis undertaken here by Koppe was done in *Cinergy* by Richard Rosen. The methodology used by Rosen and Sahu is the same as that used by Koppe and Sahu. (Koppe Deposition, Doc. 292 Ex. 17 at 13).

percent." *Id.* at 460. Recognizing that utilities operate power generation equipment in three general ways - - - baseload, cycling, and peaking - - - the court determined that the methodology used was reliable only when used with "baseload" electric generating units. *Id.* at 459. The court described baseload equipment as "operating virtually continuously," whereas cycling equipment is "operated on a regular or fairly regular basis, but not continuously." *Id.* Determining that the plant at issue was operated as a cycling facility because it did not operate at full capacity, the court held that the experts' testimony should not have been admitted. *Id.* at 460. This Court finds the reasoning of the Seventh Circuit persuasive and agrees that the Koppe-Sahu methodology only works if the unit is operated as a baseload unit.

Although the parties point the Court to various sources for a correct definition of the term "baseload,"[8] the Court finds that the definition of relevance in this case is the one used in *Cinergy*, namely a facility that operates "virtually continuously" at "full capacity." *See id.* at 459-60. The Court's finding that this is the definition of

[8] At the hearing, Koppe testified that there are two ways in which the term "baseload" is commonly used. (Tr. 25). He stated that one is a relatively broad definition, which is that the unit operates for most of the time when it is available. *Id.* He also recognized that there is a narrower definition that is sometimes used, which is that not only does the unit operate most of the time when it is available, but it generally operates at full power when it is available. *Id.* Koppe testified that in his report he employed the broader definition of baseload. *Id.* In contrast, Wayne Moore, an expert witness for Alabama Power, testified that he utilized the narrower definition of baseload in his expert report. *Id.* at 125-26.

baseload as used by the *Cinergy* court is bolstered by Judge Posner's citation to *Northern Indiana Public Service Co. v. Colorado Westmoreland, Inc.*, 667 F. Supp. 613, 629 (N.D. Ind. 1987), when describing the three ways in which utilities operate power generation equipment. *Cinergy*, 623 F.3d at 459-60. In that case, Chief Circuit Judge Easterbrook, sitting by designation, defined a baseload unit as meaning, in industry parlance, "a unit run constantly at maximum efficient output - - - in other words, supplying the "base load" of the system, while other generators are brought on line or spun up to meet peak loads." *N. Ind. Pub. Serv. Co.*, 667 F. Supp. at 629. *Colorado Westmoreland* is of particular import because Judge Easterbrook sat on the panel in the *Cinergy* decision. Also lending support to this definition of baseload as it pertains to *Cinergy* is the testimony of Mr. Alan M. Hekking ("Hekking"). Hekking testified as an expert witness on behalf of the United States in *Cinergy*.[9] (Doc. 367 Ex. 3). In *Cinergy*, Hekking testified on direct examination that baseload units were the ones that ran "full power all day long; so all 24 hours, all the time," whereas he described cycling units as "during peak demand, you'll go to full capacity. At night when people turn their lights off and go to bed, those plants will roll back to maybe half capacity, maybe even a third, but they cycle during the course of 24

[9] Plaintiffs also have offered Hekking as an expert witness in the instant case on the matter of whether the projects at issue were routine maintenance, repair, and replacement. (Doc. 319 Ex. 47).

hours up and down depending on the demand."[10] *Id.* at 170-71.

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[10] At the hearing, Plaintiffs objected to the introduction of Hekking's testimony in the *Cinergy* trial as inadmissible hearsay. (Tr. 242). Alabama Power argued that the prior testimony was admissible as an admission by a party-opponent under Federal Rule of Evidence 801(d)(2). *Id.* The Court directed Plaintiffs to file a brief by February 25, 2011, explaining why the prior testimony was hearsay not subject to an exception. *Id.* at 248. Plaintiffs agreed to file the brief by that date. *Id.* On February 25, 2011, Plaintiffs filed a brief on a separate issue in which they stated that they did not intend to file a brief on the admissibility of the Hekking testimony from the *Cinergy* trial. (Doc. 371 at 3). Alabama Power filed a brief on the Hekking testimony in *Cinergy* on March 4, 2011, arguing that the testimony was admissible under Federal Rule of Evidence 801(d)(2)(C) and (D). (Doc. 372 at 7-8).

Federal Rule of Evidence 801(d)(2) provides that statements are not hearsay if the statement is offered against a party and is "(C) a statement by a person authorized by the party to make a statement concerning the subject, or (D) a statement by the party's agent or servant concerning a matter within the scope of the agency or employment, made during the existence of the relationship[.]" Although the parties have not cited to a case from the Eleventh Circuit on the issue, the Ninth Circuit has held that an expert witness' trial testimony in an earlier bellwether trial on the same subject was an admission of a party-opponent under Rule 801(d)(2)(C). *In re Hanford Nuclear Reservation Litig.*, 534 F.3d 986, 1016 (9th Cir. 2008). With respect to Rule 801(d)(2)(D), the former Fifth Circuit has held that prior deposition testimony of an expert hired by the defendant was an admission of the defendant. *Collins v. Wayne Corp.*, 621 F.2d 777, (5th Cir. 1980); *see Bonner v. City of Prichard*, 661 F.2d 1206, 1209 (11th Cir. 1981) (en banc) (adopting as binding precedent all decisions of the former Fifth Circuit handed down prior to October 1, 1981). Although the court did not cite Rule 801(d)(2)(D), it did analyze the admissibility of the testimony under agency principles as set out in the rule. *Id.* at 780-82. Because the expert had been hired by the defendant to investigate and analyze the bus accident at issue, the court found that the expert's report on his investigation and his deposition testimony in which he explained his analysis and investigation was an admission of the defendant. *Id.* at 782.

The *Cinergy* definition of baseload addresses not only the amount of time that a unit is operated but also the level of output that the unit achieves. The reason that the Koppe-Sahu methodology works for baseload units and not cycling units is because the presumption that an increase in a facility's annual capacity will result in a proportionately equal increase in its output is only valid if the facility is operated virtually continuously at the highest level of output possible.[11] The restrictions on the

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Hekking was employed to provide an expert opinion in *Cinergy*. The same Plaintiff employs him in this case to provide an expert opinion on the same provisions of the Clean Air Act. This Court finds the Hekking testimony in *Cinergy* admissible under both Sections (C) and (D) of Rule 801(d)(2).

Alternatively, the Court finds that, by declining to brief the issue, the United States has abandoned its objection to such testimony. *See Flanigan's Enters., Inc. v. Fulton Cnty.*, 242 F.3d 976, 987 n.16 (11th Cir. 2001) (holding that a party waives an argument if the party "fail[s] to elaborate or provide any citation of authority in support" of the argument); *Ordower v. Feldman*, 826 F.2d 1569, 1576 (7th Cir. 1987) (stating that an argument made without citation to authority is insufficient to raise an issue before the court) (cited in *United States Steel Corp. v. Astrue*, 495 F.3d 1272, 1287 n.13 (11th Cir. 2007)).

[11] Indeed, Koppe conceded as much.

> Q. And Mr. Koppe, perhaps you can explain that last concept. How does the use of the units relate to the output factor?
>
> A. For units that spend a lot of time [one or several months annually] on reserve shutdown, the use of the unit could include less time on reserve shutdown. For units that already spend very little time on reserve shutdown, if the use of the unit is going to increase, that is - - that means that the output factor is increasing. Once you're running the unit all the time it's

application of this methodology are explained by the Seventh Circuit in *Cinergy*:

> [T]he Wabash plaint is therefore operated as a cycling rather than a baseload plant and so does not operate at full capacity. There can be no presumption that an increase in its annual capacity would result in a proportionately equal increase in its output. Suppose a modification increased the plant's annual electrical generating capacity by 10 percent, but because of limited predicted use of standby capacity the output of the modified plant was unlikely to increase at all (just not to fall), and therefore its emission of pollutants was unlikely to increase.

Id. at 460.

D. The Units as Issue Were Not Baseload

1. Barry Unit 2

Prior to the replacement of the reheater at Barry Unit 2 in 1997, the unit averaged 36 days per year in reserve shutdown. (Doc. 319 Ex. 5 at 58). A unit is in reserve shutdown when the unit could have operated but was shutdown because it was not needed. *Id.* at 28. In the 24-month time period preceding the replacement, Barry Unit 2 had an actual output factor of 78.7.[12] *Id.* at 60. Thus, during the period

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> available, the only way to use it more is to run it at higher power levels.

(Tr. 33) (emphasis added).

[12] With respect to the issue of whether the units were baseload, Plaintiffs focus on the unit's capacity factor. (Doc. 360 at 6). Koppe defines capacity factor in his expert report as "the actual generation for the time period, divided by maximum possible generation (what the unit could have produced had it run

prior to the replacement, Barry Unit 2 was not operating 9.9 percent of the time because it was not needed and was operating at 78.7 percent of its total capacity during the times that it was in operation. The Court finds that Barry Unit 2 was not a baseload unit as it did not operate "virtually continuously" at "full capacity."[13] *See Cinergy*, 623 F.3d at 459-60. As Barry Unit 2 was not operated as a baseload unit, Koppe's and Sahu's opinion with respect to the replacement of the reheater at Barry Unit 2 will be excluded.[14] *See id.* at 460.

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continuously at full power)." Thus capacity factor does not exclude the time period that a unit spends in forced shutdowns, which includes the time that the unit is not in operation due to the faulty machinery that the project is repairing. Output factor, the ratio of the amount of power the unit actually generated to the amount it could have generated had it always operated at full power whenever it operated at all, combined with a calculation of the time a unit spends in reserve shutdown, gives a picture of how the unit would operate if there were no mechanical limitations. Thus, the Court finds that output factor is a more accurate measure than capacity factor of whether or not the unit was operated as a baseload unit.

[13] It is not necessary here for the Court to determine at what precise percentage of its capacity a unit must operate in order to be considered baseload. There can be no question that a unit, designed to run most efficiently at or near its maximum capacity, that does not utilize 22.3 percent of its total potential generation when it is operating is not operating at "full capacity." The Court also notes that, although it is employing the definition of baseload as used in *Cinergy*, Barry Unit 2 does not meet the standard required of the broader definition of baseload as used by Koppe in his expert report which requires a unit to operate most of the time it is available.

[14] At the hearing, Koppe testified that the formula he and Sahu used could be applied to a cycling unit if three preliminary findings were made: (1) the

additional available hours at the unit will actually be used post-project, (2) the unit will not spend more time in reserve shutdown post-project than it had pre-project, and (3) the output factor for the unit will not decrease post-project. (Tr. 40-43). Koppe did not explain these limitations on the formula in his report. Koppe testified that he had established that these hypotheses were correct for the units at issue in *Cinergy*, but that the *Cinergy* court apparently did not understand that he had investigated these hypotheses. *Id.* at 66.

Koppe stated that the difference in applying the formula to a baseload unit versus a cycling unit was that you do not have to "dig as hard" because "the fact that the unit will be used all the time when it's available is a no brainer because the unit is used all the time when it's available." *Id.* at 44-45. He stated that "[t]he conclusions or assumptions that go into the methodology have to be verified in different ways or more thoroughly depending on how the unit is operated. But assuming that the assumptions are facts, the methodology applies equally well to any kind of unit." *Id.* at 71. Koppe testified that he investigated into all three areas for each unit at issue and determined that he could apply the formula to each unit, agreeing with the Court's characterization that he had "investigated far enough to determine that an investigation was not – further investigation was not necessary." *Id.* at 67. Koppe admitted that he had not adequately investigated at least one of these three preliminary areas if the unit had spent a lot of time in reserve shutdown and thus was cycling and not baseload under his broader definition of the term. *Id.* at 67-68.

Daubert does not permit the Court to admit opinion evidence which is connected to existing data only by the *ipse dixit* of the expert. *Joiner*, 522 U.S. at 146. Here, Koppe stated that he investigated "enough" to determine that "further investigation was not necessary" in order to apply the formula to the units at issue. At the same time, he admitted that he had not investigated far enough if the units had spent a lot of time in reserve shutdown. It is unclear how far in this spectrum of investigation one must go to apply the formula. Koppe says he has gone far enough, but the Court's gatekeeping function requires more than simply "taking the expert's word for it." *United States v. Frazier*, 387 F.3d 1244, 1261 (quoting Fed. R. Evid. 702 advisory committee's note (2000 amends.)). Therefore, the Court finds that the formula is only applicable to the units at issue if they are

2. Greene County Unit 2

Koppe states, without giving a specific figure, that Greene County Unit 2 spent "little time" in reserve shutdown during the pre-project period.[15] (Doc. 319 Ex. 5 at 131 n.328). In the 24-month time period preceding the replacement of the primary reheater, Greene County Unit 2 had an actual output factor of 78.7. (Doc. 329 Ex. 5 at 125). Thus, during the period prior to the replacement, Greene County Unit 2 was operating at 78.7 percent of its total capacity during the times that it was operating. Even if Greene County Unit 2 operated "virtually continuously," it did not operate at

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operated as baseload units as defined in *Cinergy*. The Court notes that in their petition for a rehearing, the *Cinergy* plaintiffs also made the argument to the Seventh Circuit that the methodology at issue was applicable to both baseload and cycling units. (Doc. 367 Ex. 4 at 11-14). On December 29, 2010, the petition for rehearing was denied.

As the Court has previously stated, Barry Unit 2 does not meet the standard required of the broader definition of baseload as used by Koppe in his expert report. Therefore, even if the formula at issue could be applied to a cycling facility, Koppe has not done "enough" investigation to apply it to Barry Unit 2.

[15] In his expert report, Koppe does not state a specific amount of time that Greene County Unit 2 spent in reserve shutdown. (Doc. 319 Ex. 5 at 131, 131 n.328). At the hearing, a chart was presented by the United States which indicated that Greene County Unit 2 spent .80% of the time it was available in reserve shutdown in 1989 prior to the project. A different chart prepared by Koppe and presented by the United States at the hearing showed that, in the year before the project, Greene County Unit 2 spent .50% of the time it was available in reserve shutdown. (Tr. 53). In either event, these charts are consistent with Koppe's testimony of "little time."

"full capacity." Thus, Greene County Unit 2 was not operated as a baseload unit and Koppe's and Sahu's opinion with respect to the replacement of the primary reheater at Greene County Unit 2 will be excluded. *See Cinergy*, 623 F.3d at 459-60.

3. Gorgas Unit 10

Koppe states, without giving a specific figure, that Gorgas Unit 10 spent "little time" in reserve shutdown during the pre-project period.[16] (Doc. 319 Ex. 5 at 131 n.328). In the 24-month time period preceding the balanced draft conversion, Gorgas Unit 10 had an actual output factor of 82.1. (Doc. 329 Ex. 5 at 102). Thus, during the period prior to the replacement, Gorgas Unit 10 was operating at 82.1 percent of its total capacity during the times that it was operating. Even if Gorgas Unit 10 operated "virtually continuously," it did not operate at "full capacity."[17] Thus, Gorgas

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[16] In his expert report, Koppe does not state a specific amount of time that Gorgas Unit 10 spent in reserve shutdown. (Doc. 319 Ex. 5 at 131, 131 n.328). At the hearing, Koppe testified that he found that Gorgas Unit 10 had spent some time in reserve shutdown prior to the balanced draft conversion. (Tr. 88). A chart was presented during the direct examination of Koppe which showed that Gorgas 10 had no reserve shutdown in the year prior to the balanced draft conversion and was in reserve shutdown 7.9% of the time it was available in the year two years prior to the balanced draft conversion.

[17] Without setting a precise percentage of its capacity at which a unit must operate in order to be considered baseload, the Court finds that there can be no question that a unit designed to run most efficiently at or near its maximum capacity that does not utilize 17.9 percent of its total potential generation is not operating at "full capacity."

Unit 10 was not operated as a baseload unit and Koppe's and Sahu's opinion with respect to the balanced draft conversion at Gorgas Unit 10 must be excluded. *See Cinergy*, 623 F.3d at 459-60.

IV. CONCLUSION

Accordingly, for the reasons stated above, Alabama Power's Motion in Limine relating to Koppe and Sahu is due to be granted. Specifically, and consistently with the Seventh Circuit's opinion in *Cinergy*, the Court finds that the methodology employed by Koppe and Sahu is not valid when applied to units that are not operated as baseload units and that none of the units remaining at issue in this case were operated as baseload units during the relevant time periods. A separate order will be entered.

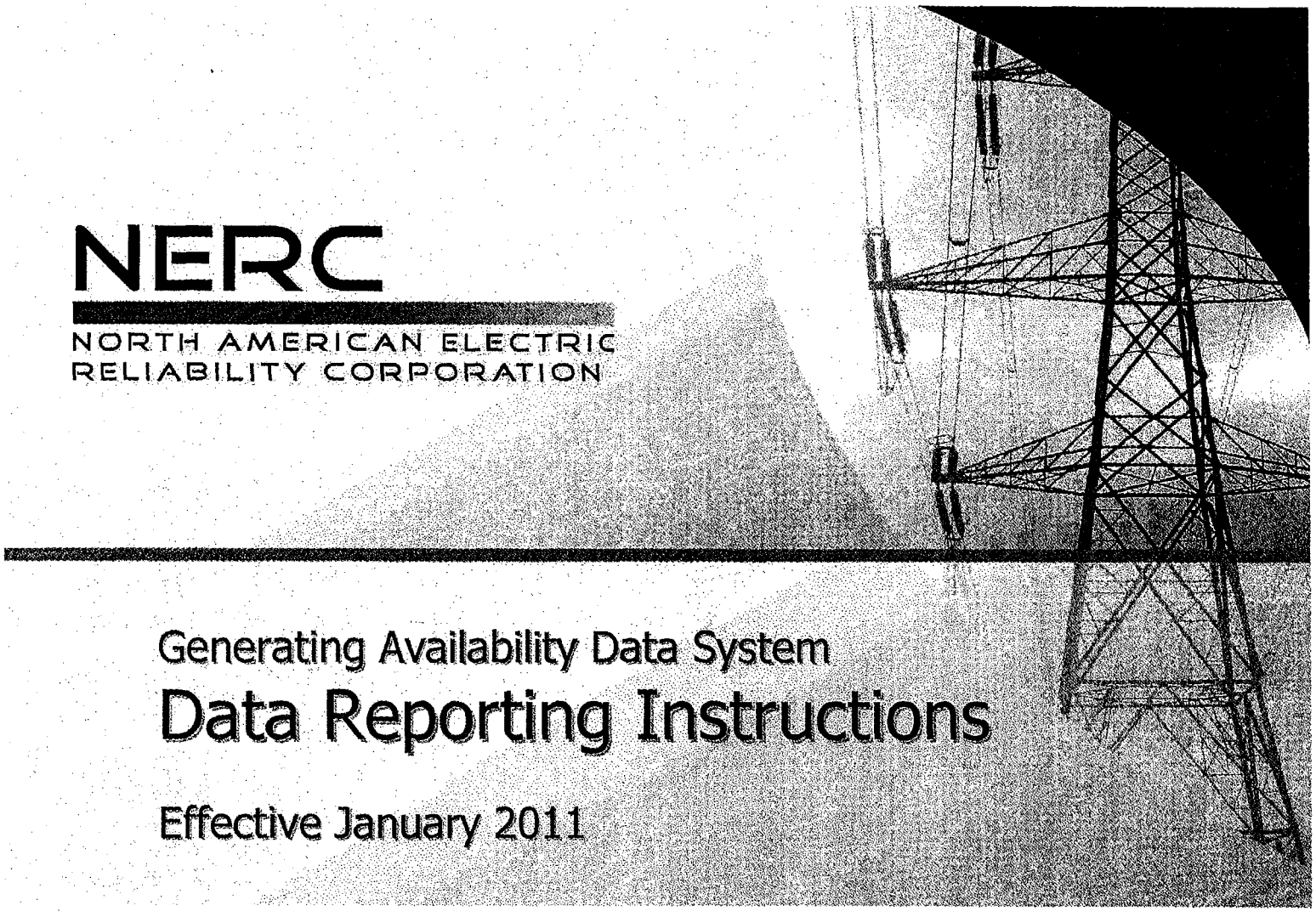
DONE and **ORDERED** this the 14th day of March, 2011.

VIRGINIA EMERSON HOPKINS
United States District Judge

EXHIBIT 2
TO DEFENDANTS' MEMORANDUM OF LAW IN SUPPORT OF MOTION *IN LIMINE* TO EXCLUDE THE OPINIONS OF ROBERT H. KOPPE AND RANAJIT SAHU

NERC

NORTH AMERICAN ELECTRIC RELIABILITY CORPORATION



Generating Availability Data System

Data Reporting Instructions

Effective January 2011

Section III – Event Reporting

An "event" occurs any time a generating unit's operating status or capability changes. Four general classifications of events are reported to GADS: outages, deratings, reserve shutdowns, and noncurtailing events. Reporting event data, in addition to performance and design data, provides all the information needed to evaluate generating unit availability. Event data are especially useful since they are often used to do specialized unit and equipment operation and design analyses.

Participation in the GADS program is voluntary, but once committed, each utility should report as much detailed information as it can. Reporting the level of detail requested in these *GADS Data Reporting Instructions* enables you and other industry analysts to perform detailed, useful analyses. *Figure III-1*, below, suggests the classes of events utilities should report for different types and sizes of conventional, non-renewable generating units. For renewable generating plants (wind), please see the GADS Wind Turbine Generation Data Reporting Instructions.

Figure III-1
Event Reporting Requirements vs. Unit Type/Size

Unit		Event Classifications			
Type	Size (MW)	Outage	Derating	Reserve Shutdown	Non-curtailing
Fossil (Steam)	All	Required	Required	Required	Optional
Nuclear	All	Required	Required	Required	Optional
Hydro & Pumped Storage (with automatic data recording equipment)	All	Required	Required	Required	Optional
Hydro & Pumped Storage (without automatic data recording equipment)	All	Required	Required	Optional	Optional
Gas Turbines/Jet Engines	All	Required	Required	Required	Optional
Combined Cycle/Co-generators	All	Required	Required	Required	Optional
Diesel	All	Required	Required	Required	Optional
Fluidized Bed Combustion	All	Required	Required	Required	Optional
Miscellaneous	All	Required	Required	Required	Optional

Detailed event data reporting for larger units is suggested and is indicated by the term "required." The term "optional" implies that each utility must determine if it can reasonably provide the detailed data. We encourage all electric generating organizations to report all event data information currently collected for their units and any additional information they can reasonably provide.

All units except hydro and pumped storage units without automatic data recording equipment, no matter its size or technology, are required to report reserve shutdown events. GADS encourages that all events (forced, maintenance, and planned) for all units be reported for providing complete reporting. GADS interprets this as 1 MW or larger with other sizes optional.

Event Report (07 Format)

Report event data to GADS in the Event Report (07) format, described in this section. Submit the data to GADS **within 30 days after the end of each calendar quarter.**

There are four distinct sections of the Event Report: A) Event Identification; B) Event Magnitude; C) Primary Cause of Event; and, D) Additional Cause of Event or Components Worked During Event. Together, these sections provide a complete description of each event experienced by a unit.

The Event Report (07) format is based on a series of 82-character images called "records." The different sections of the Event Report are on different records: Sections A and B on Record 01, Section C on Records 02 and 03, and Section D on Records 04 and 05 through 98 and 99. Unless otherwise stated, it is not necessary to zero-fill or asterisk-fill unused data fields of any section of the Event Report (07 format).

Note: As of January 1, 2010, GADS will only accept the new (07) format. There was a need by several Independent System Operators (ISO) groups to collect derating data on units smaller than 1 MW in size. Therefore, the GADS database expanded the Gross Available Capacity (GAC) and Net Available Capacity (NAC) to include two decimal places.

We are not asking for generating units of 0.01 MW size to report to GADS. Historically speaking, the smallest units reported to GADS are 1 MW. With the introduction of the 07 format, GADS can accept deratings smaller than 1 MW for units less than 1 MW in size.

A description of each section and the data elements within it follows. Included are detailed instructions for reporting each event data element.

Appendix B – Index to System/Component Cause Codes

Using This Appendix

This appendix contains system/component cause codes to use when completing GADS Event Report (97). For ease of use, it is divided into sections based on type of generating unit. Each section contains all the codes that can be used for each unit type. For example, the section for fossil steam units includes codes for the boiler, steam turbine, generator, balance of plant, pollution control equipment, external, regulatory, safety, and environmental, personnel errors, and performance testing. The section for hydro/pumped storage units contains the codes needed to report the electrical systems, generator, the hydro turbine/pump, external, regulatory, safety, and environmental, personnel errors, and performance testing. (Figure III-10, Page III-31, is a convenient reference that lists the appropriate system/component cause codes applicable to each type of generating unit.)

When copying the *GADS Data Reporting Instructions* for distribution to individual plants, copy only the section(s) of this appendix that are appropriate for the type(s) of unit(s) at each plant. This way, the plant data reporter will have only the codes needed to report events, and therefore, may avoid some data reporting errors.

Please note, a separate section is not included for Miscellaneous units. Additional cause codes for combined cycle and co-generation units are shown on Pages B-CC-1 to B-CC-34. There is also a section for geothermal units on Pages B-GE-1 to B-GE-20.

Guide for Code Selection

The intent of this appendix is not to provide a code for all possible causes or all components, but to provide, in general terms, the cause or component. The details concerning a more specific cause/component, the type of failure, method of repair/nature of work, repair effort and/or combination of preceding events are to be included in the Verbal Description on the event report. Also, utilities have the option of reporting more detailed information concerning the manner in which a system or component failed using the Failure Mechanism Code. See Page III-36 and Appendix H for more information.

When reporting an event, select the code which best describes the cause or component responsible for the event. The following criteria are to be used in selecting a code:

- Assign the cause of the event to the major component or system that was responsible for the event, not to an auxiliary component or operation that triggered the failure of a major component or system. For instance, failure of an air line to one feedwater regulating valve may cause closure of that valve, resulting in a boiler trip on low level. In this case, the

cause code for the feedwater regulating valve would be reported, not the code for the service air system. Note the fact that the valve closure was triggered by an air line failure in the verbal description. On the other hand, if the feedwater regulating valve closure had resulted from a complete loss of station air, the cause code for the station air system would be reported as the primary cause of the event. In this case, the station air system problem causes malfunctions of numerous valves and instruments throughout the plant, and no one major component or system could be uniquely identified as causing the outage.

- Report power supplies (motor control centers, breakers, etc.) which serve a particular component using the code for that component. Report power supply systems that serve multiple components using the code for the power supply system. For instance, if a breaker failure results in the loss of an FD fan, the code for the FD fan would be used. However, if a problem in the AC power distribution caused not only the loss of the FD fan but also several other major components, then use the code for AC power distribution.

- Report instruments or controls (such as pressure switches, pressure regulators, position indicators, etc.) which are part of a particular fan, pump, or valve, using the code for that component. Codes have been assigned to some control systems, such as feedwater control. Report all instruments, transmitters, logic modules, etc., associated with these systems using the code for that control system.

- Use the codes for major overhaul only for non-specific overhaul work. Major repairs conducted during a major overhaul are to be reported separately using the appropriate code(s). For example, consider the case where a general turbine overhaul is conducted during which reblading of a high pressure turbine wheel is required. Use the code 4400 to report the overhaul and include such things as opening and closing of the turbine, cleaning, and minor repairs as man-hours worked. Use the code 4012 to report the reblading of the HP turbine wheel and include only the man-hours worked on the reblading in the man-hours worked field.

- Use the codes for "External" and "Safety, Regulatory, and Environmental" only when no other system/component cause code applies. For instance, if stack emission limits are exceeded because of a fault in the flue gas scrubber, use a scrubber code. However, if a new limit on emissions is imposed and is exceeded even though the scrubber is functioning properly, then use an environmental code.

UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF MICHIGAN

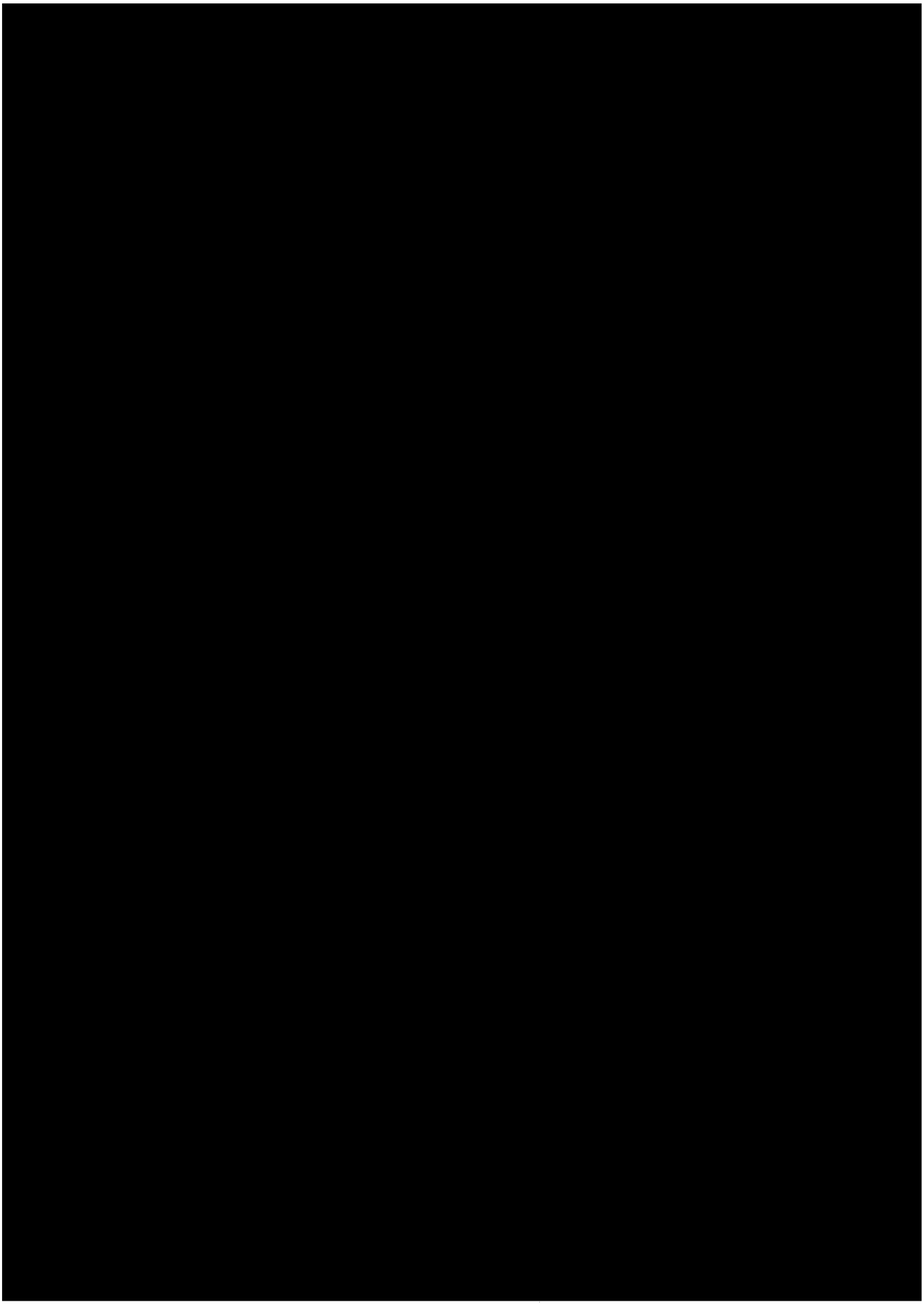
UNITED STATES OF AMERICA, Plaintiff, and NATURAL RESOURCES DEFENSE COUNCIL, INC. AND SIERRA CLUB, Intervenor-Plaintiffs, v. DTE ENERGY COMPANY AND DETROIT EDISON COMPANY, Defendants.	Civil Action No. 2:10-cv-13101-BAF-RSW Judge Bernard A. Friedman Magistrate Judge R. Steven Whalen

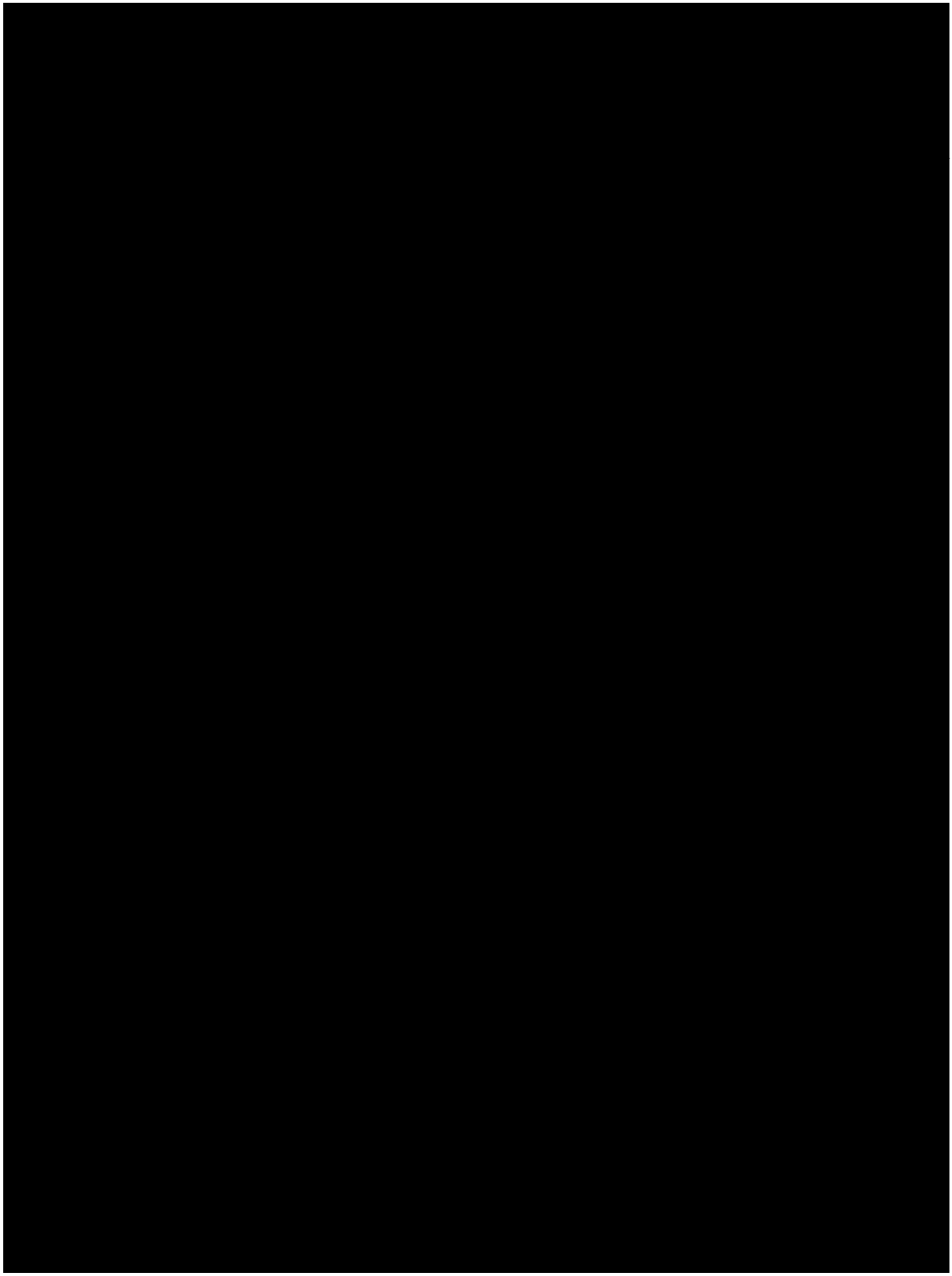
DEFENDANTS' MEMORANDUM OF LAW IN SUPPORT OF MOTION *IN LIMINE* TO EXCLUDE THE OPINIONS OF ROBERT H. KOPPE AND RANAJIT SAHU

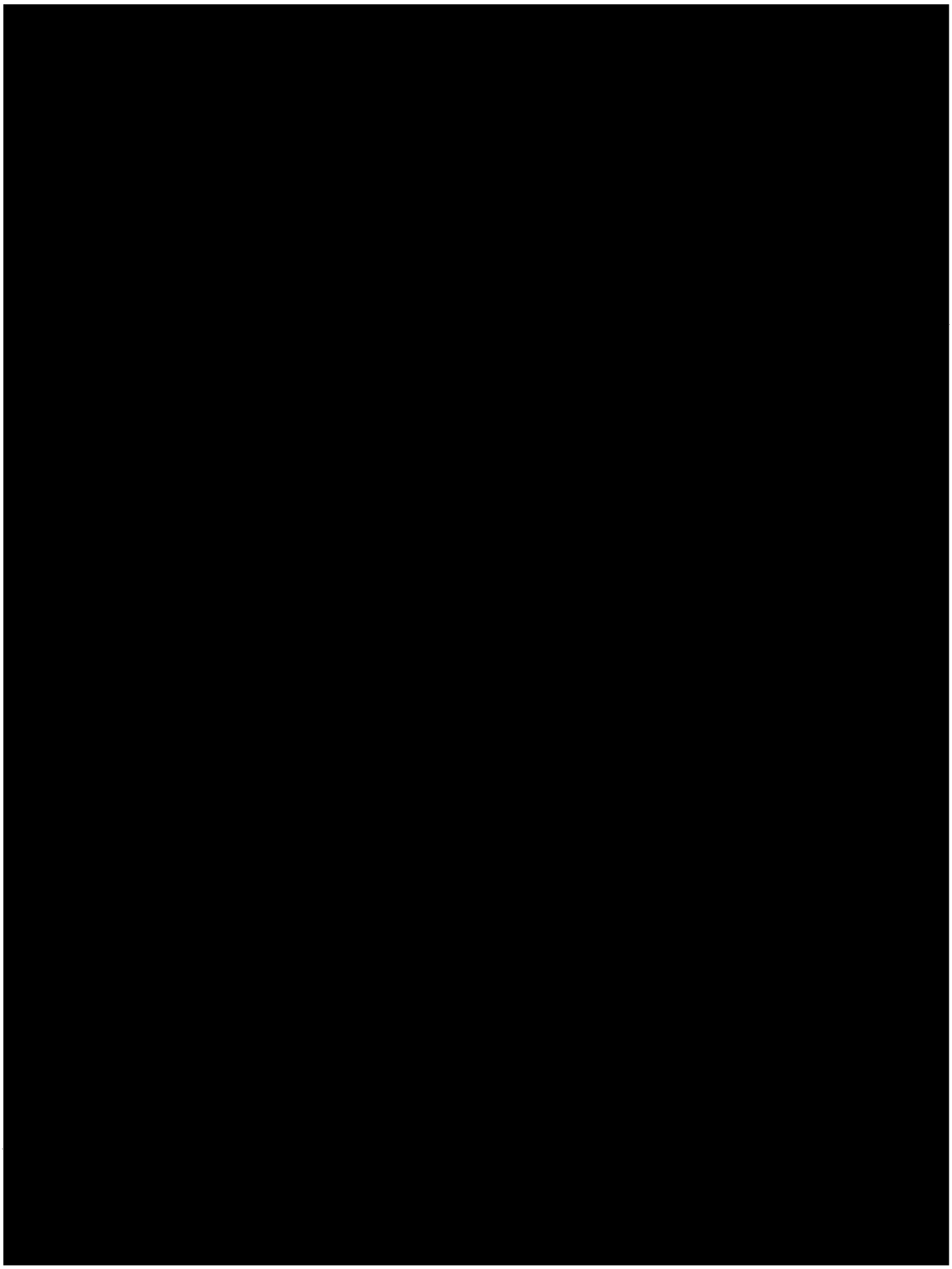
FILED UNDER SEAL
CONFIDENTIAL/TRADE SECRET - SUBJECT TO PROTECTIVE ORDER

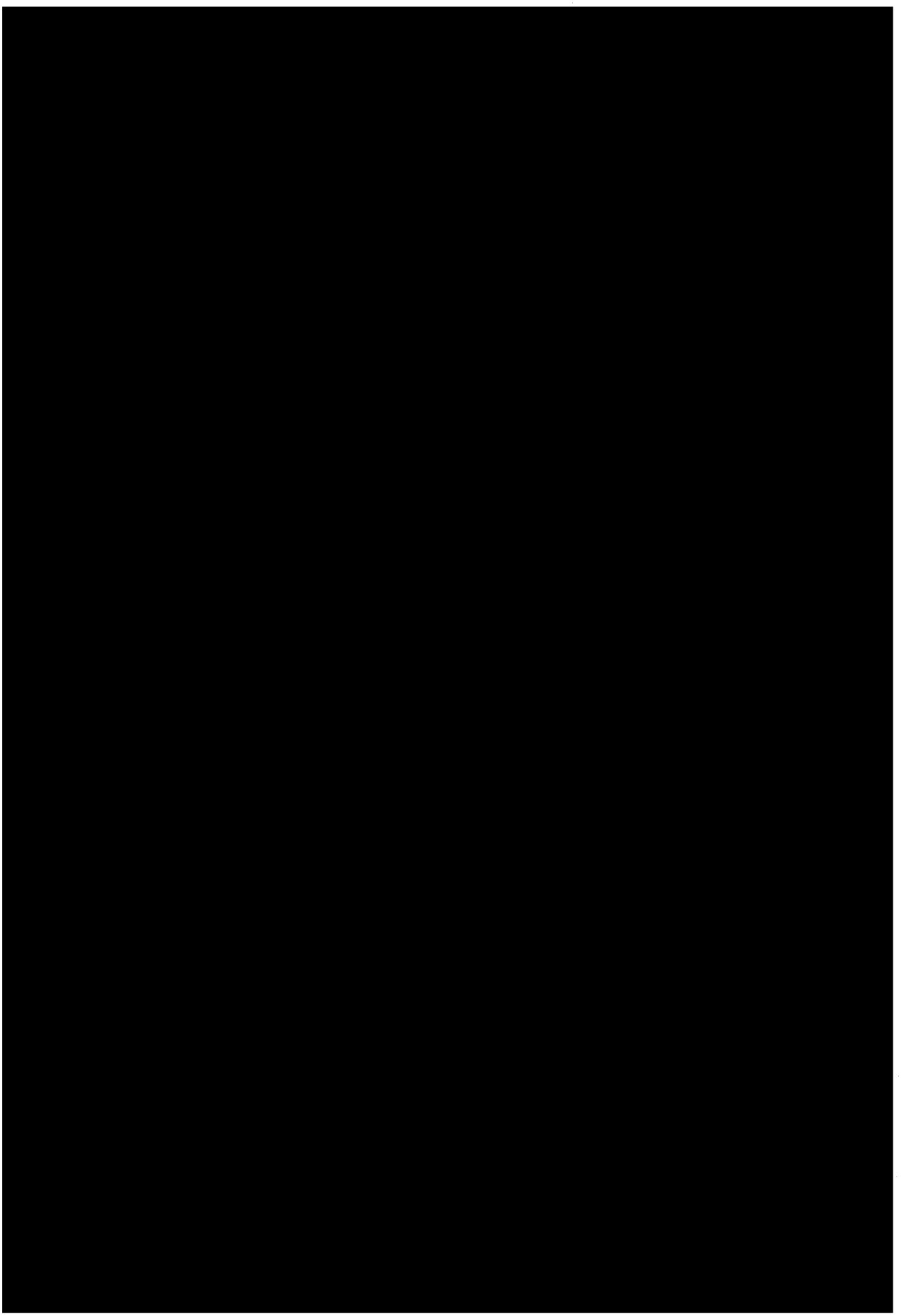
EXHIBIT 3

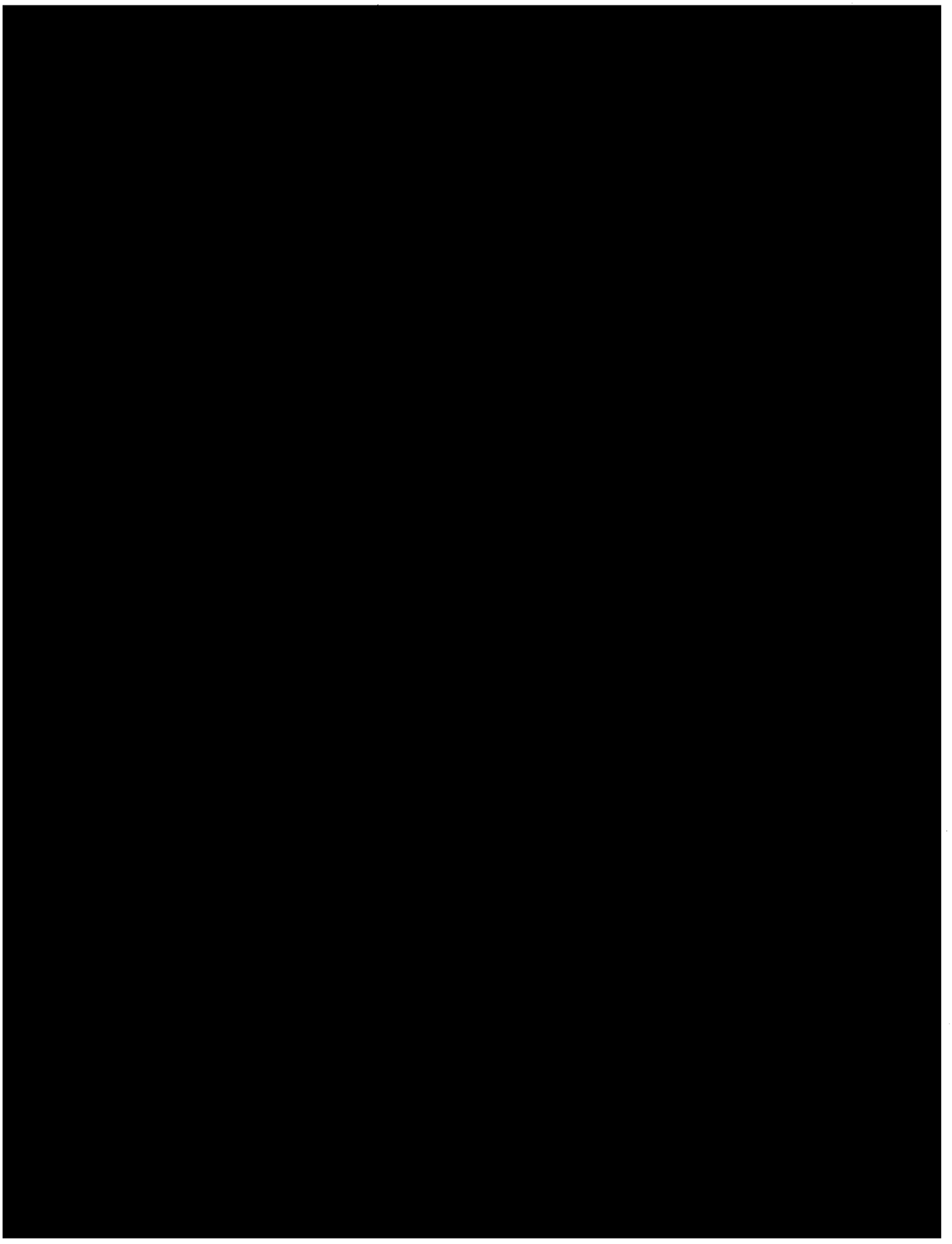
Expert Report of Ranajit (Ron) Sahu (April 22, 2011)

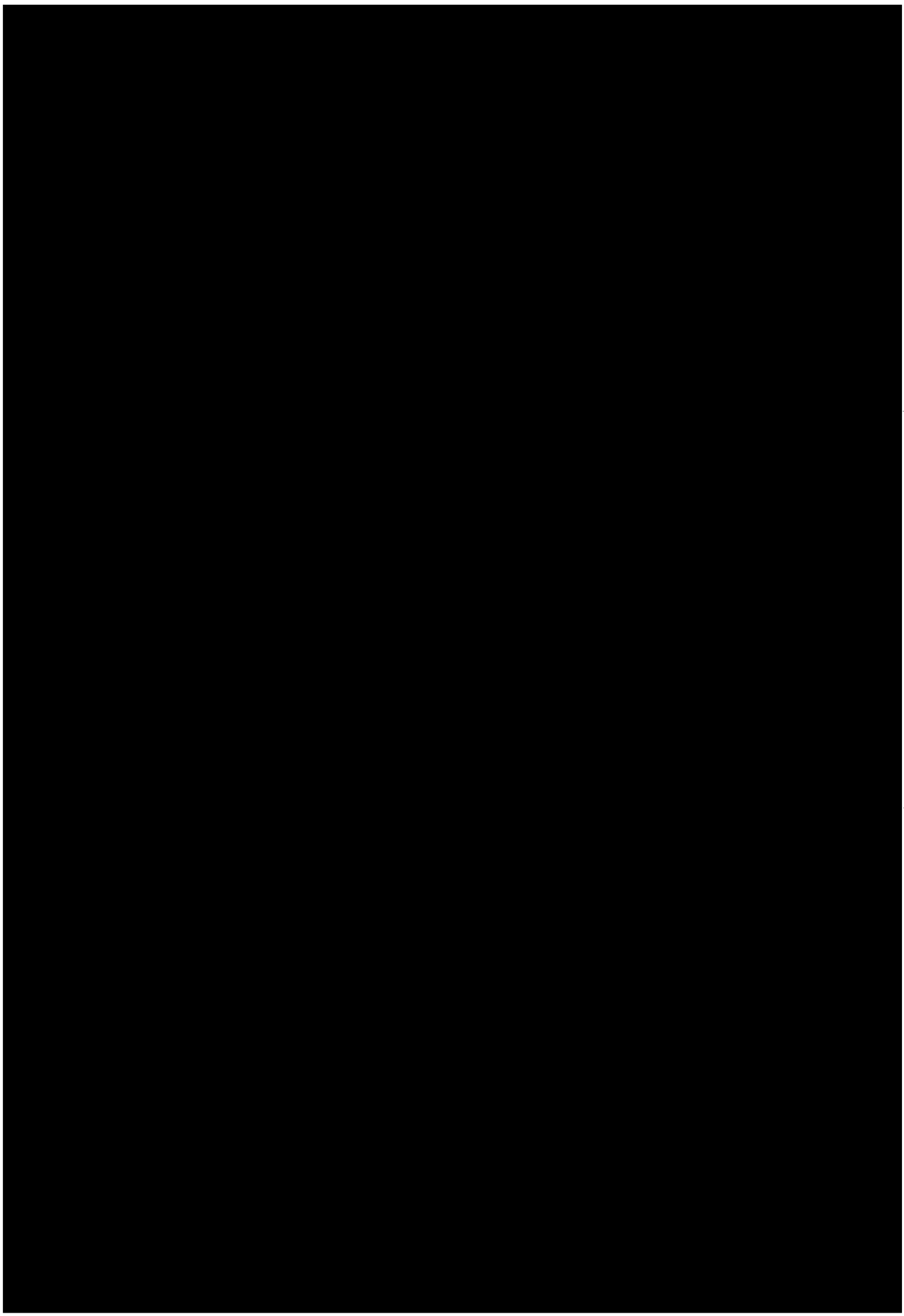


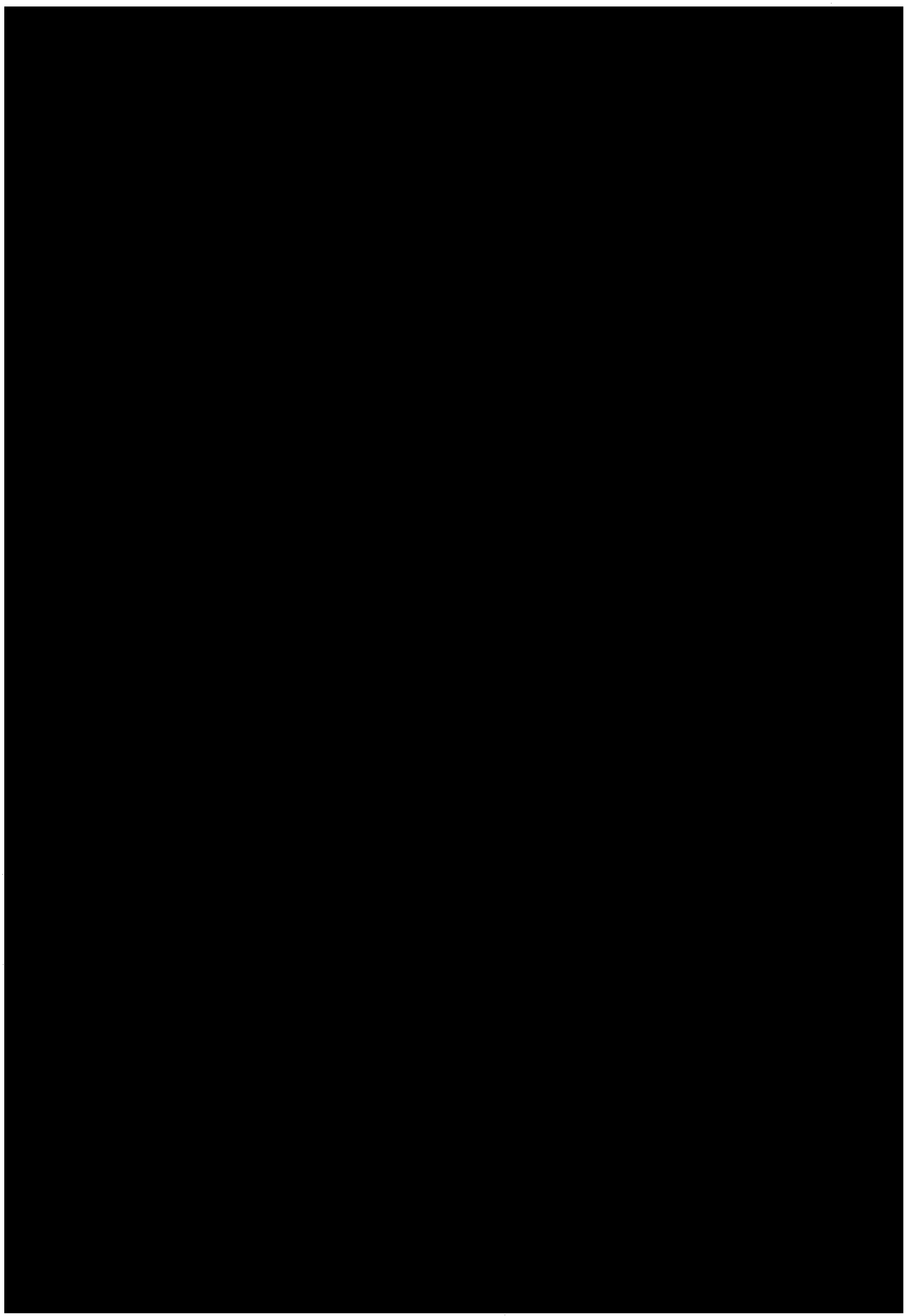


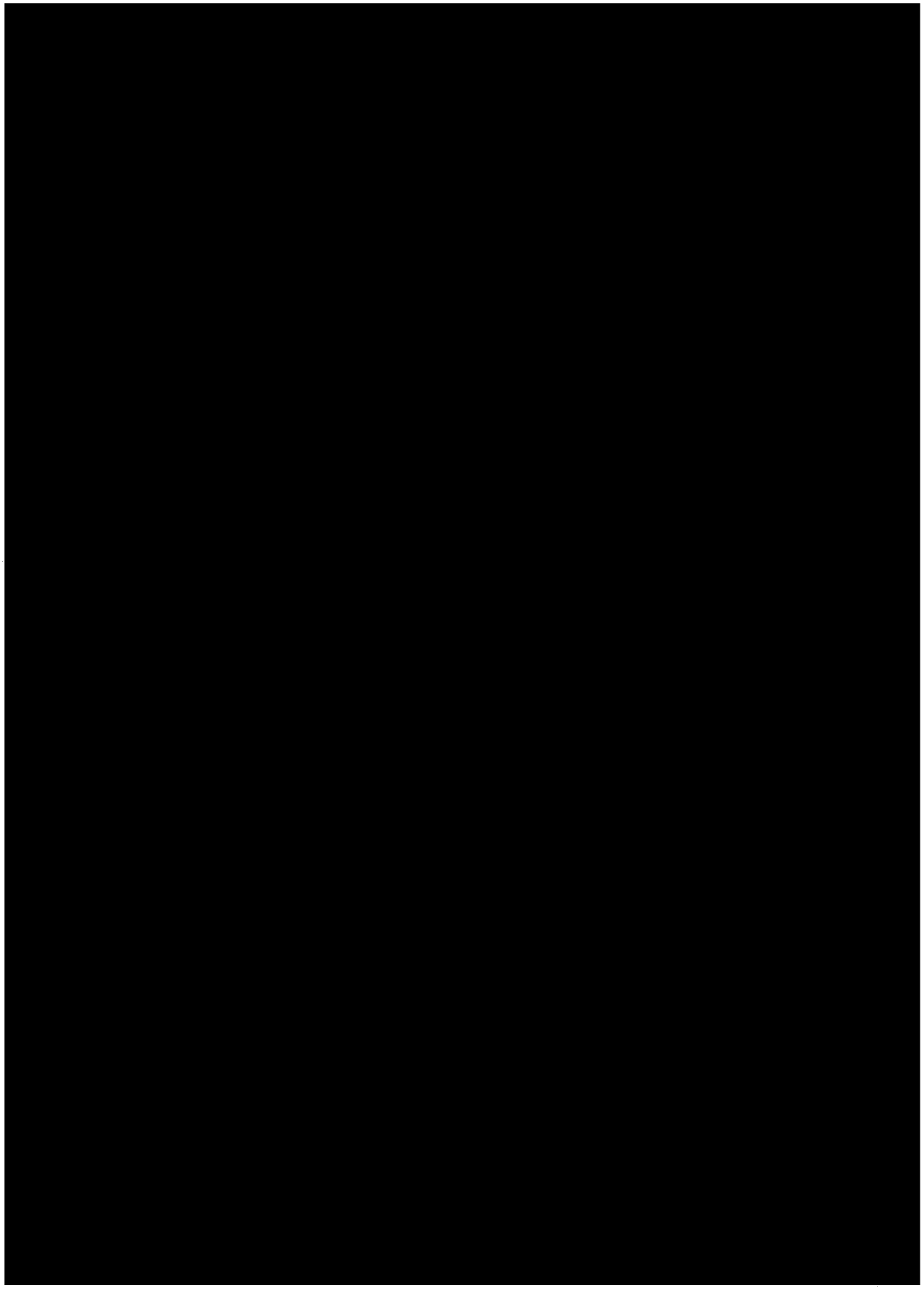


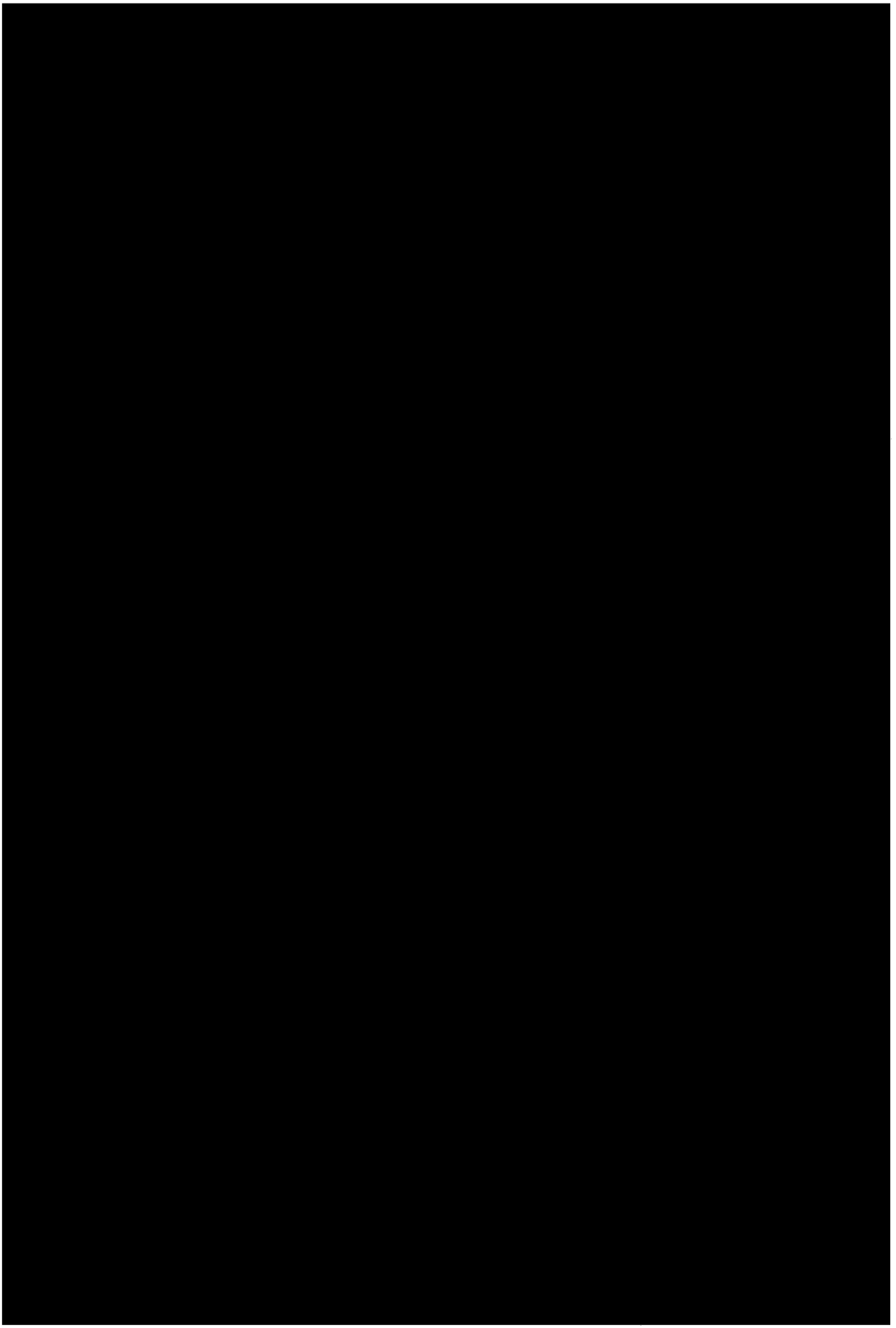


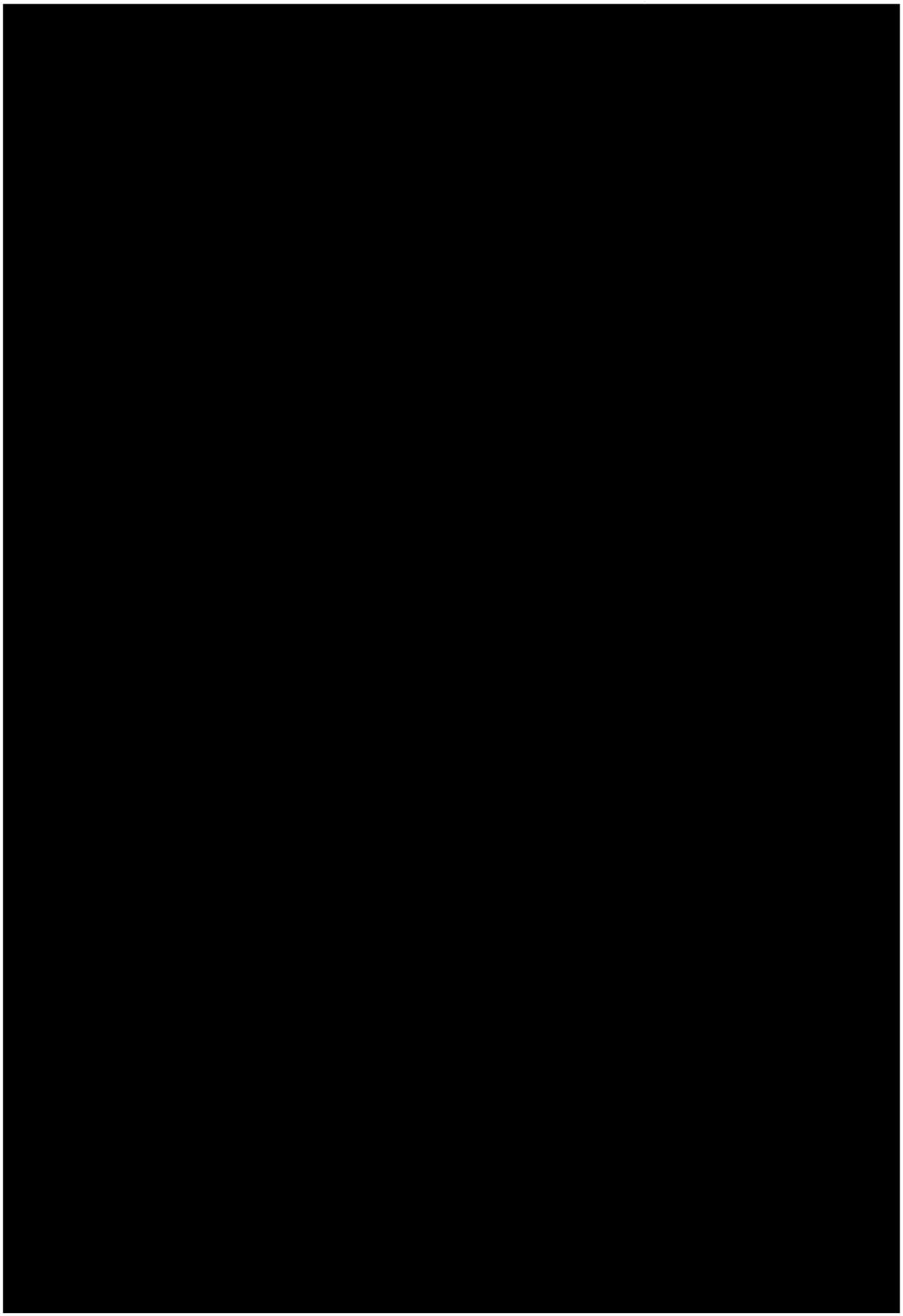


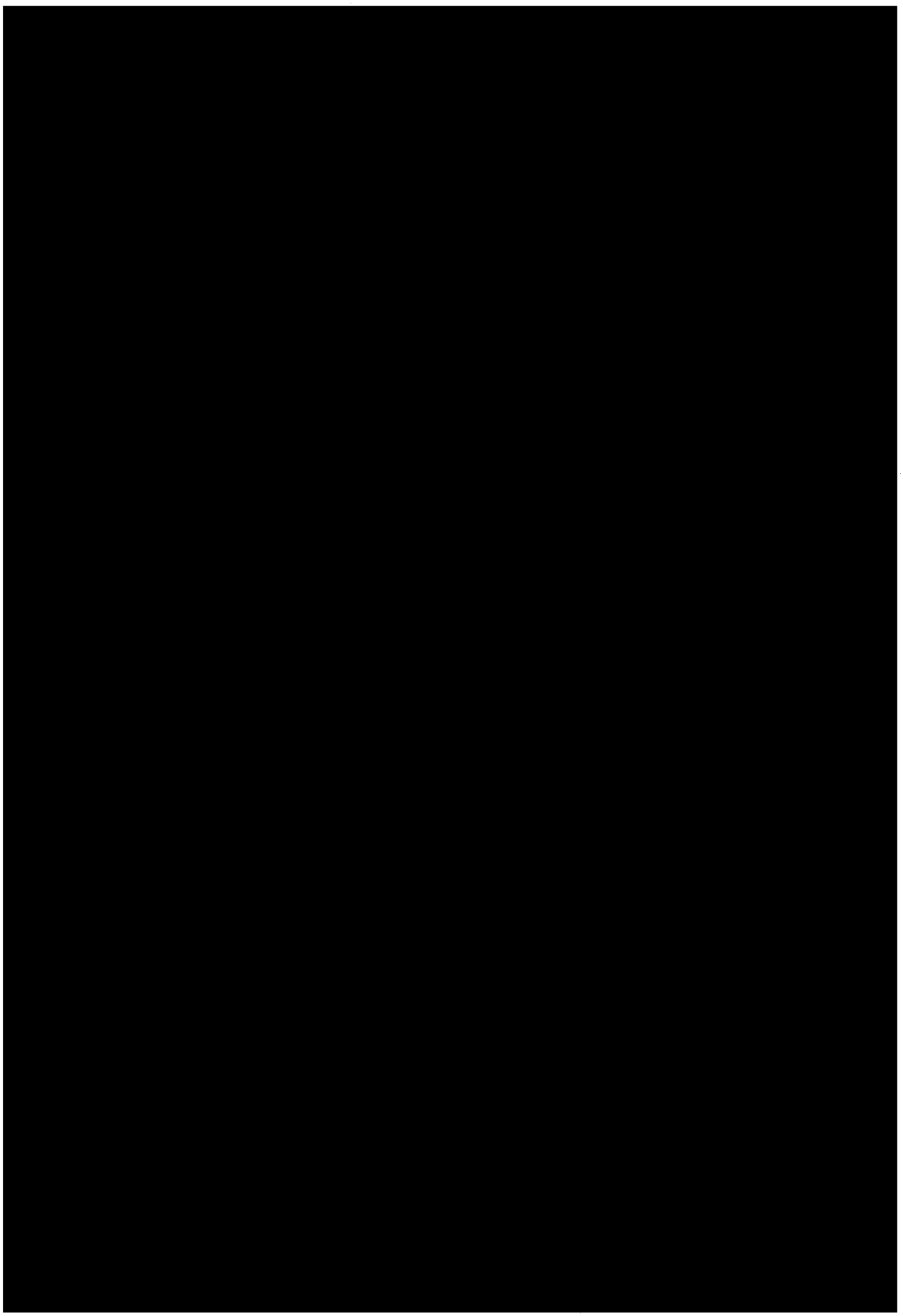


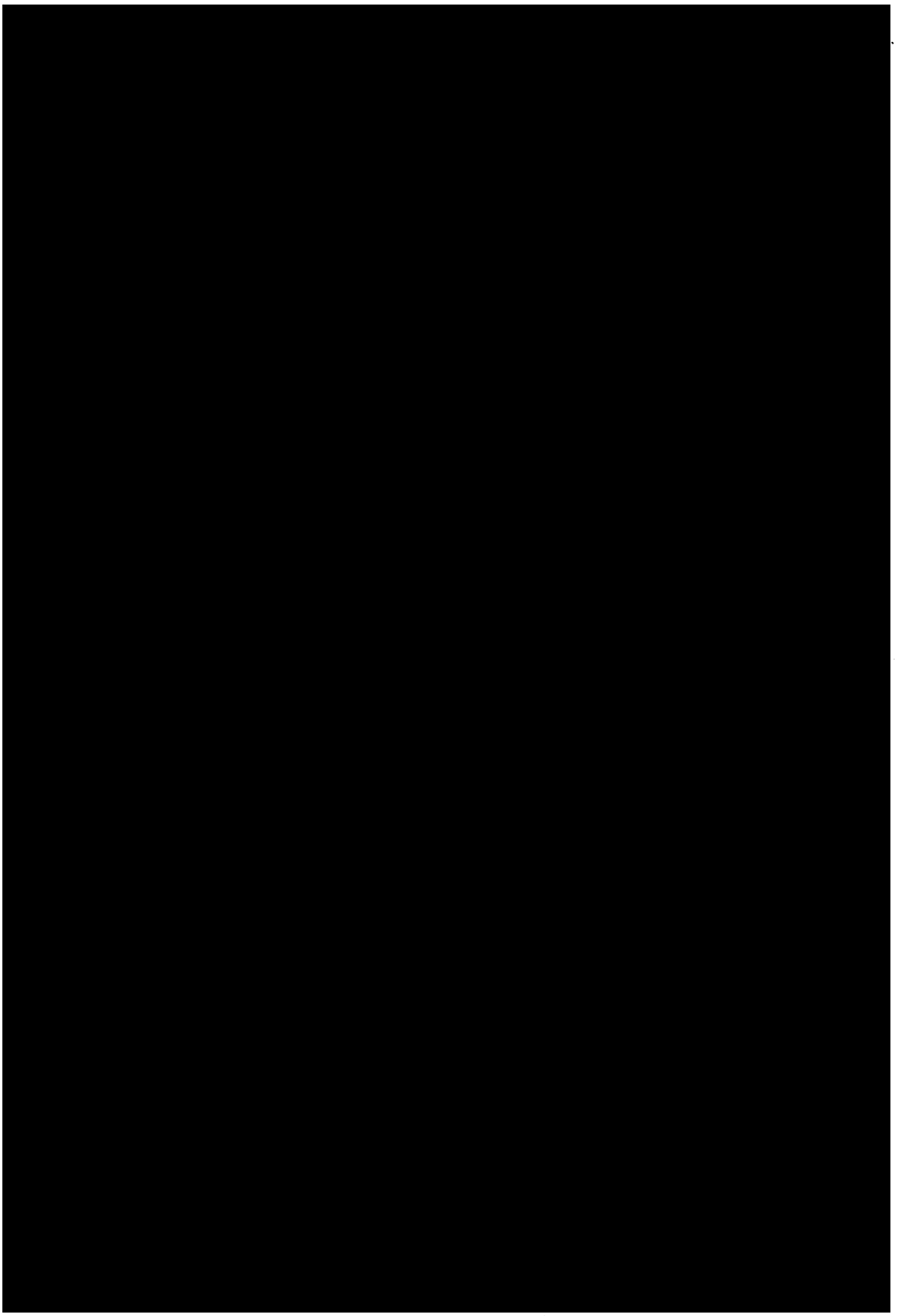


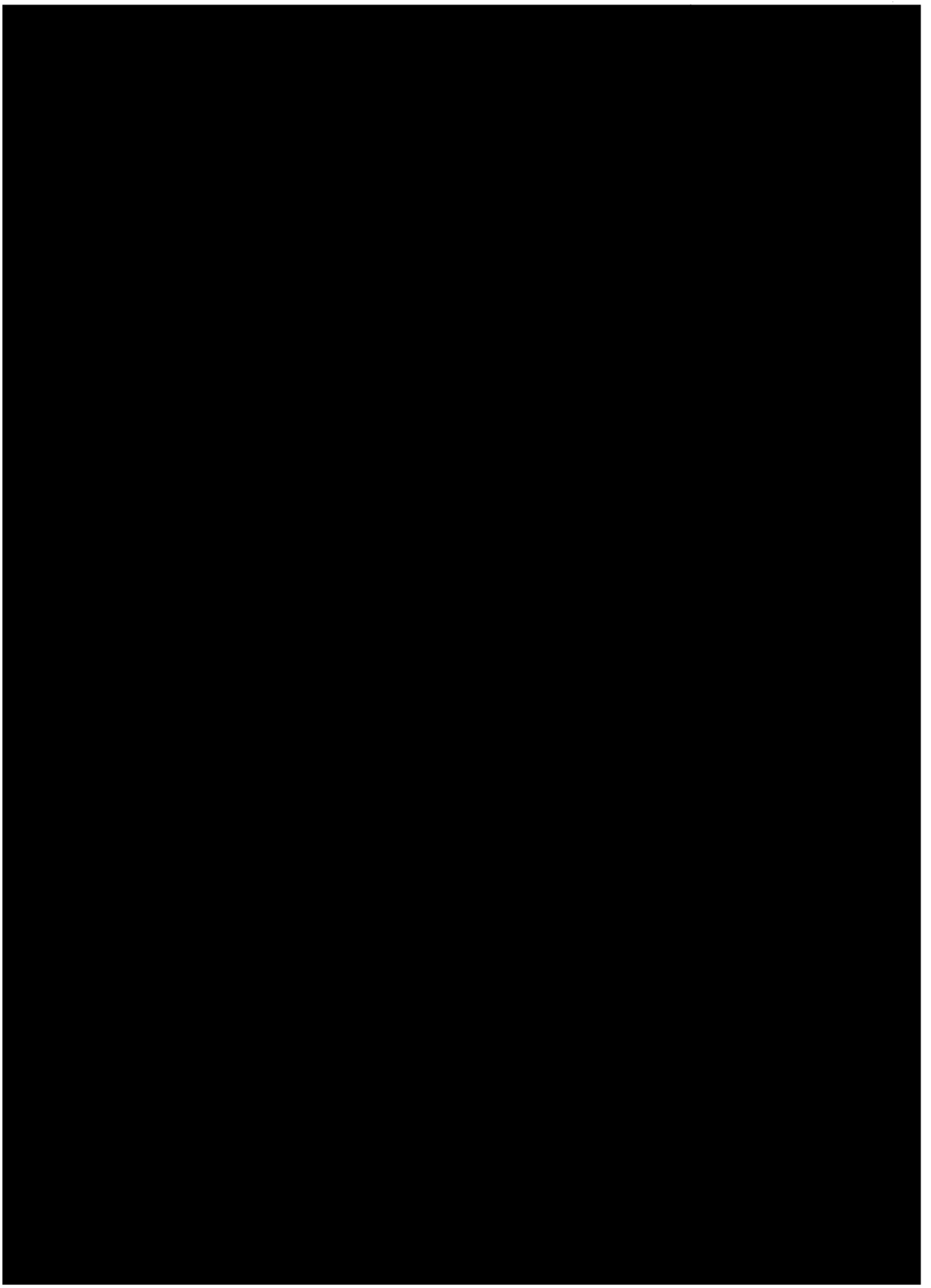


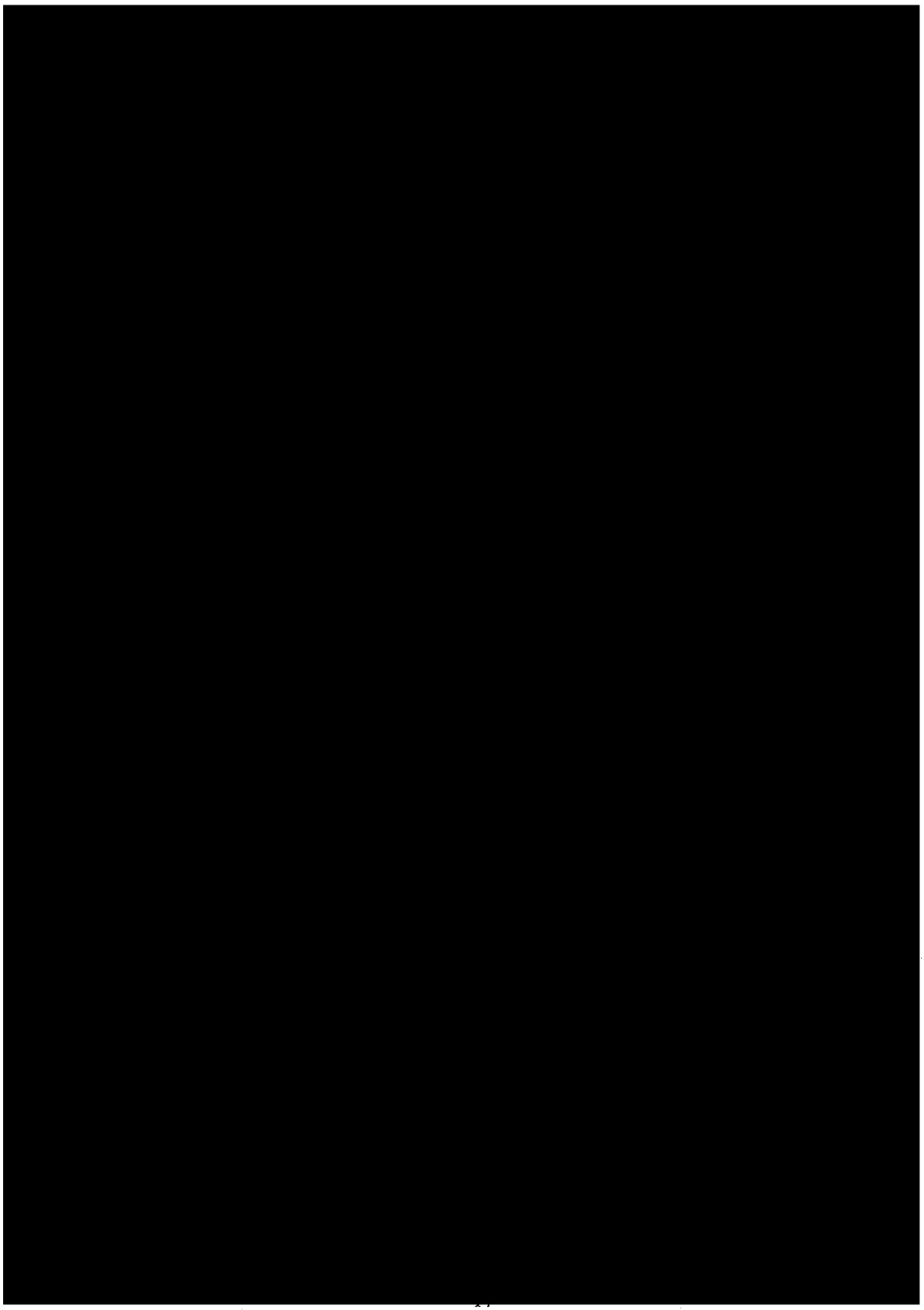


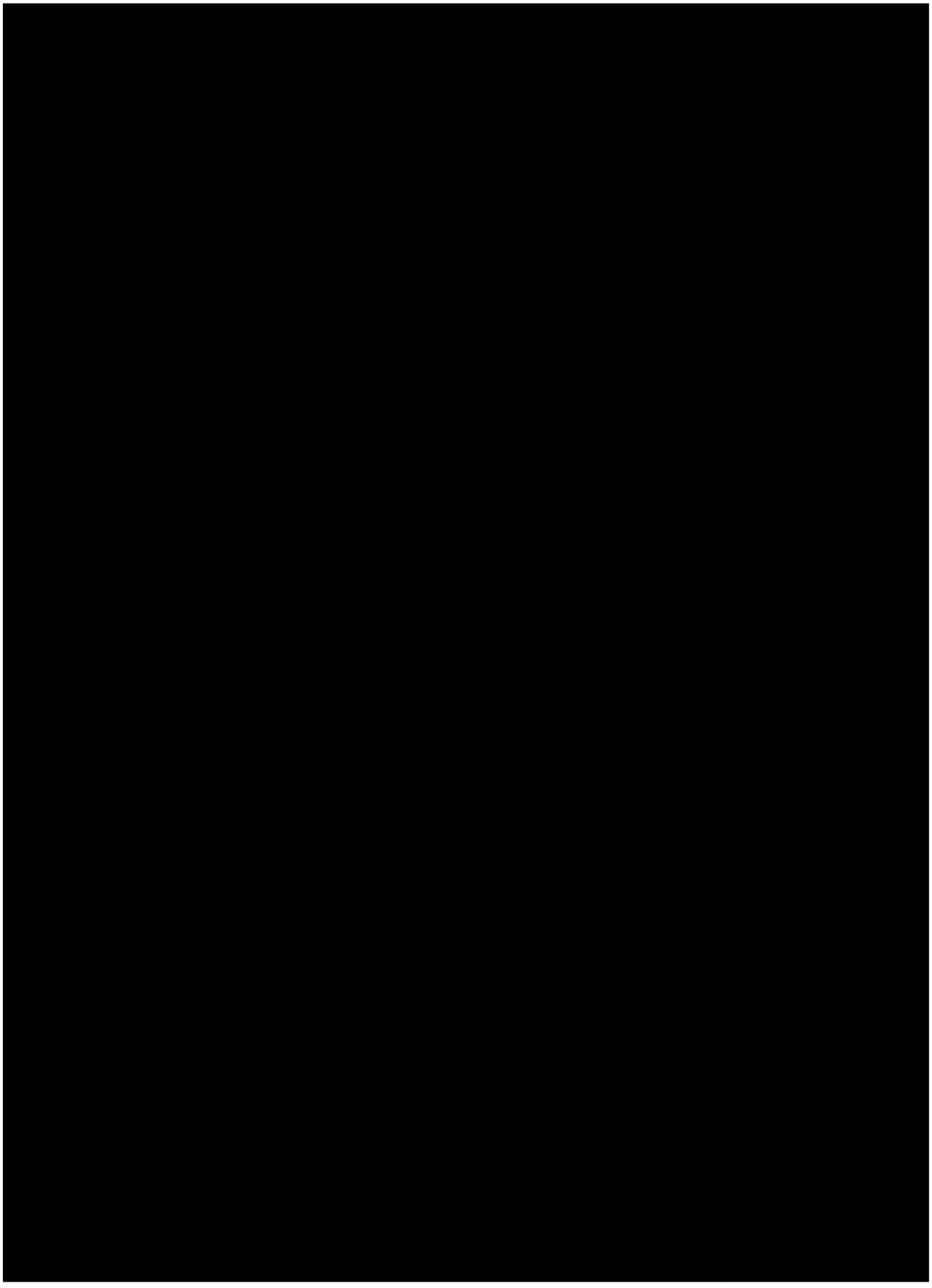


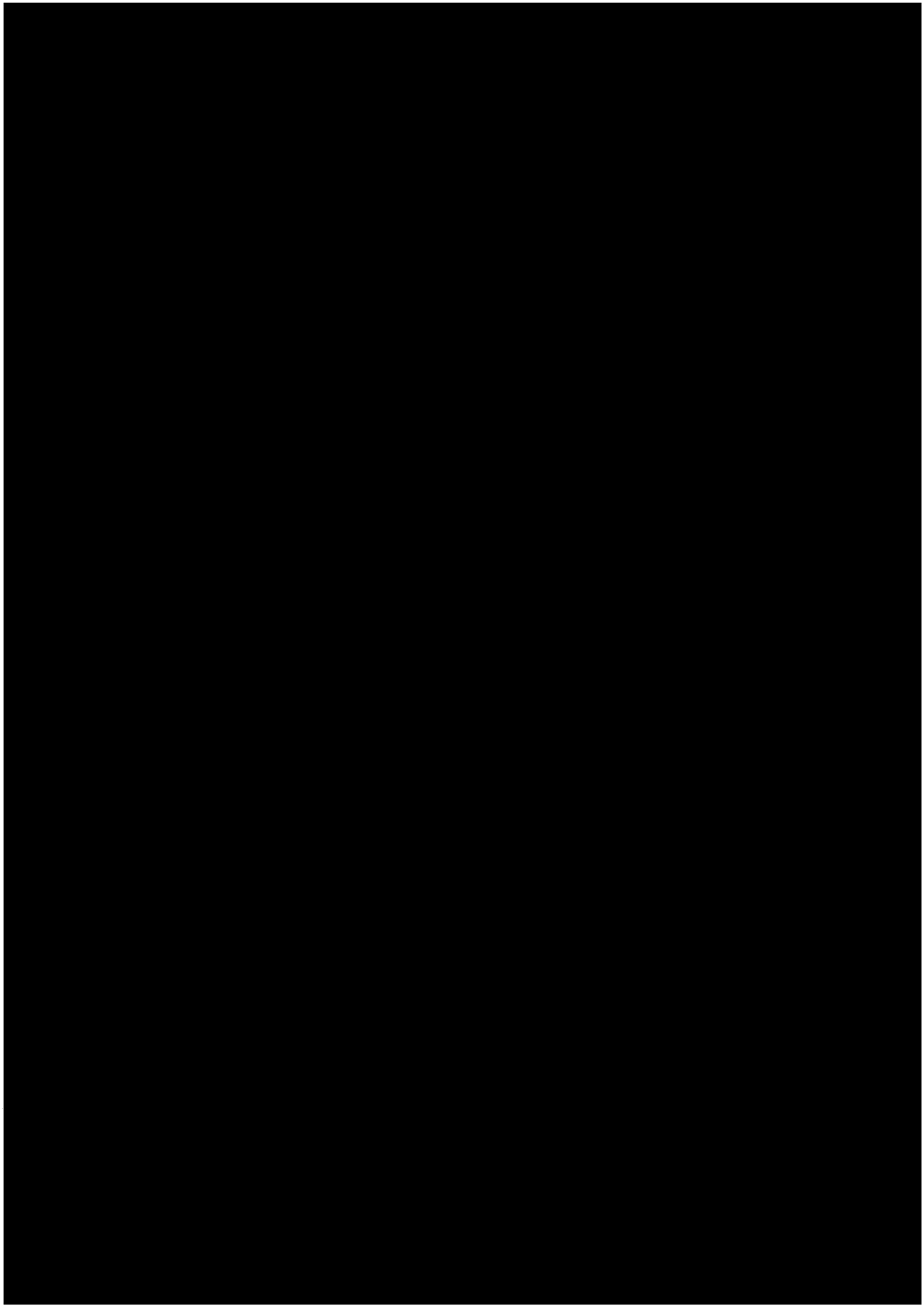


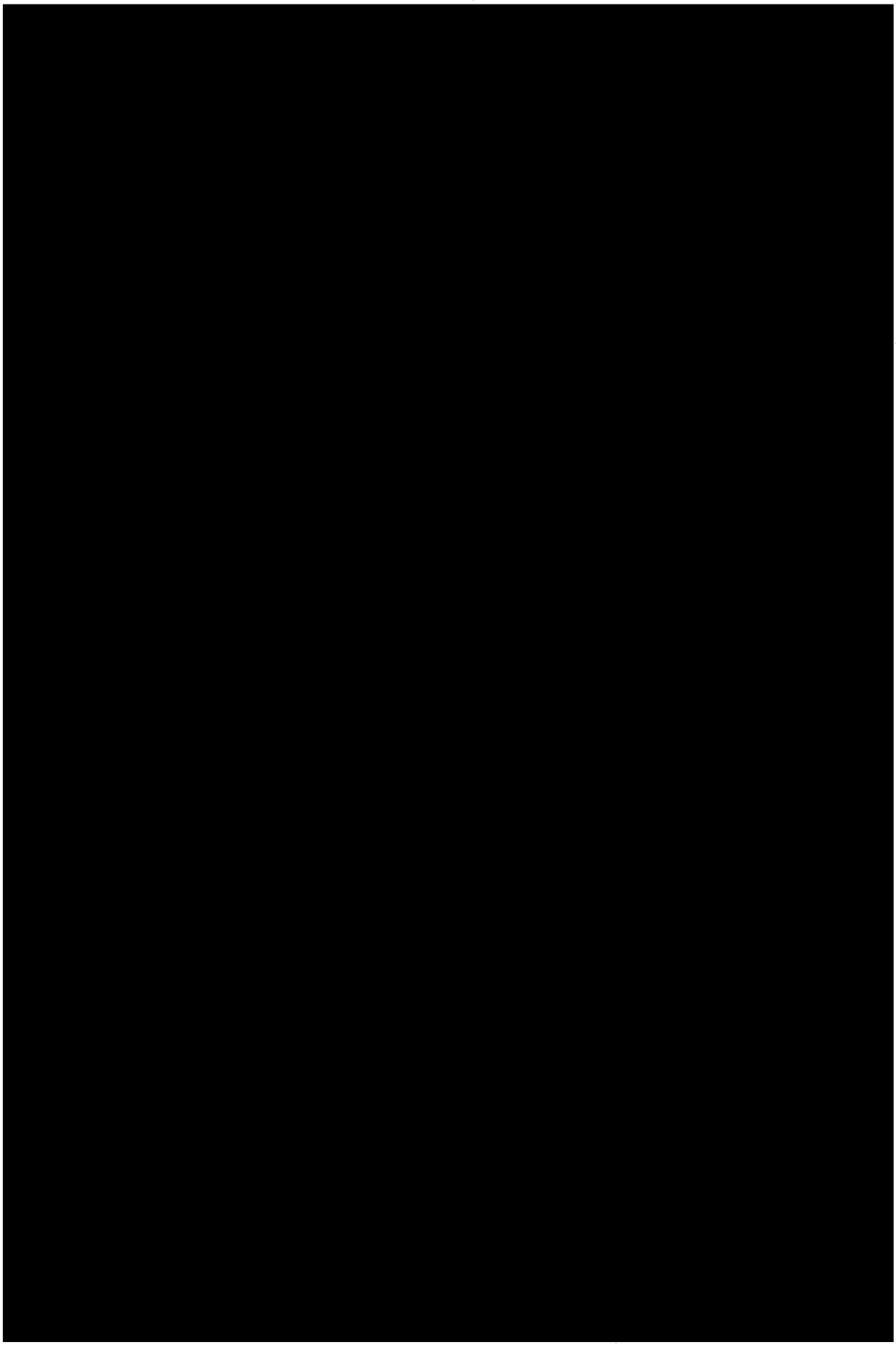


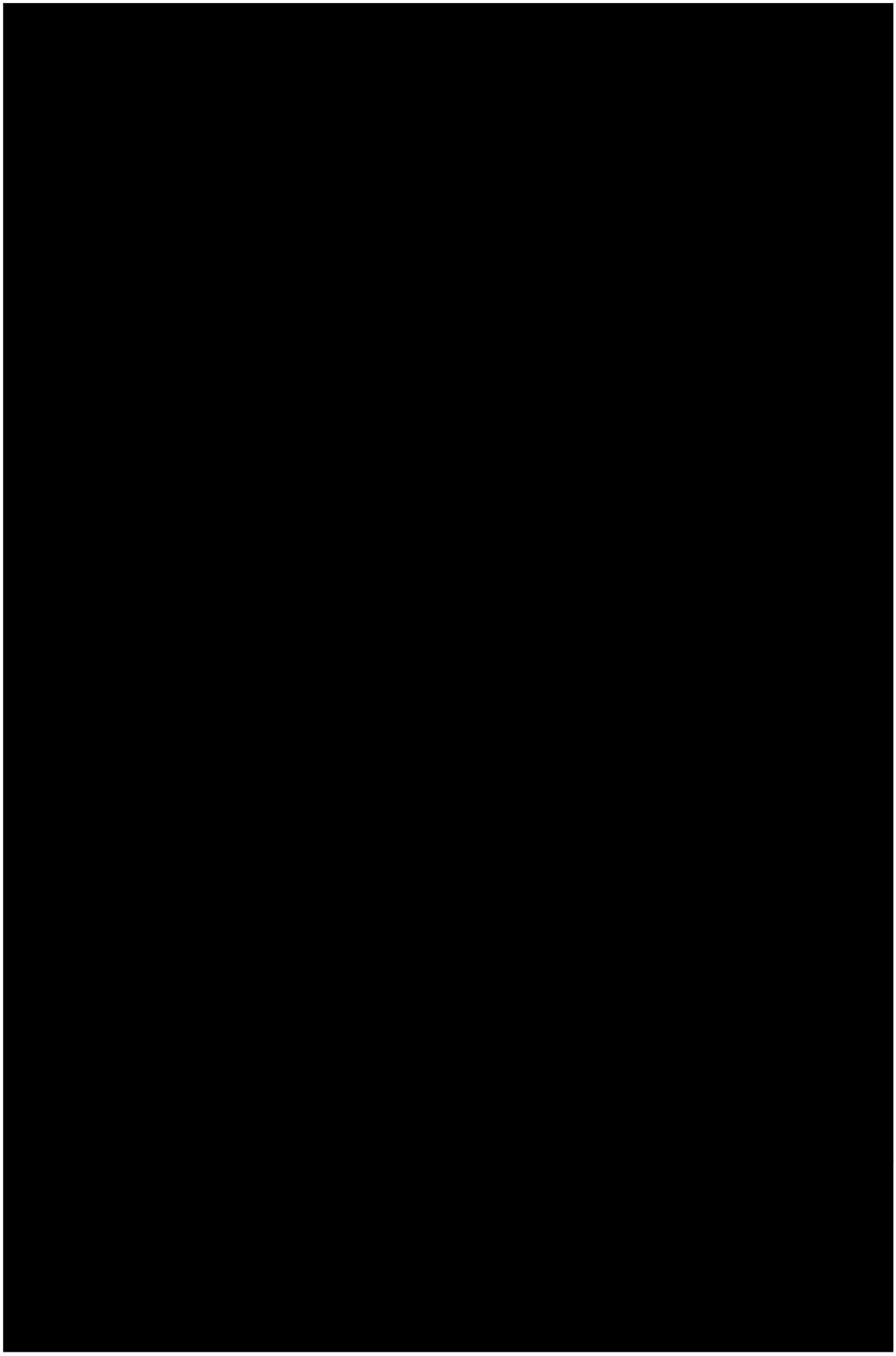


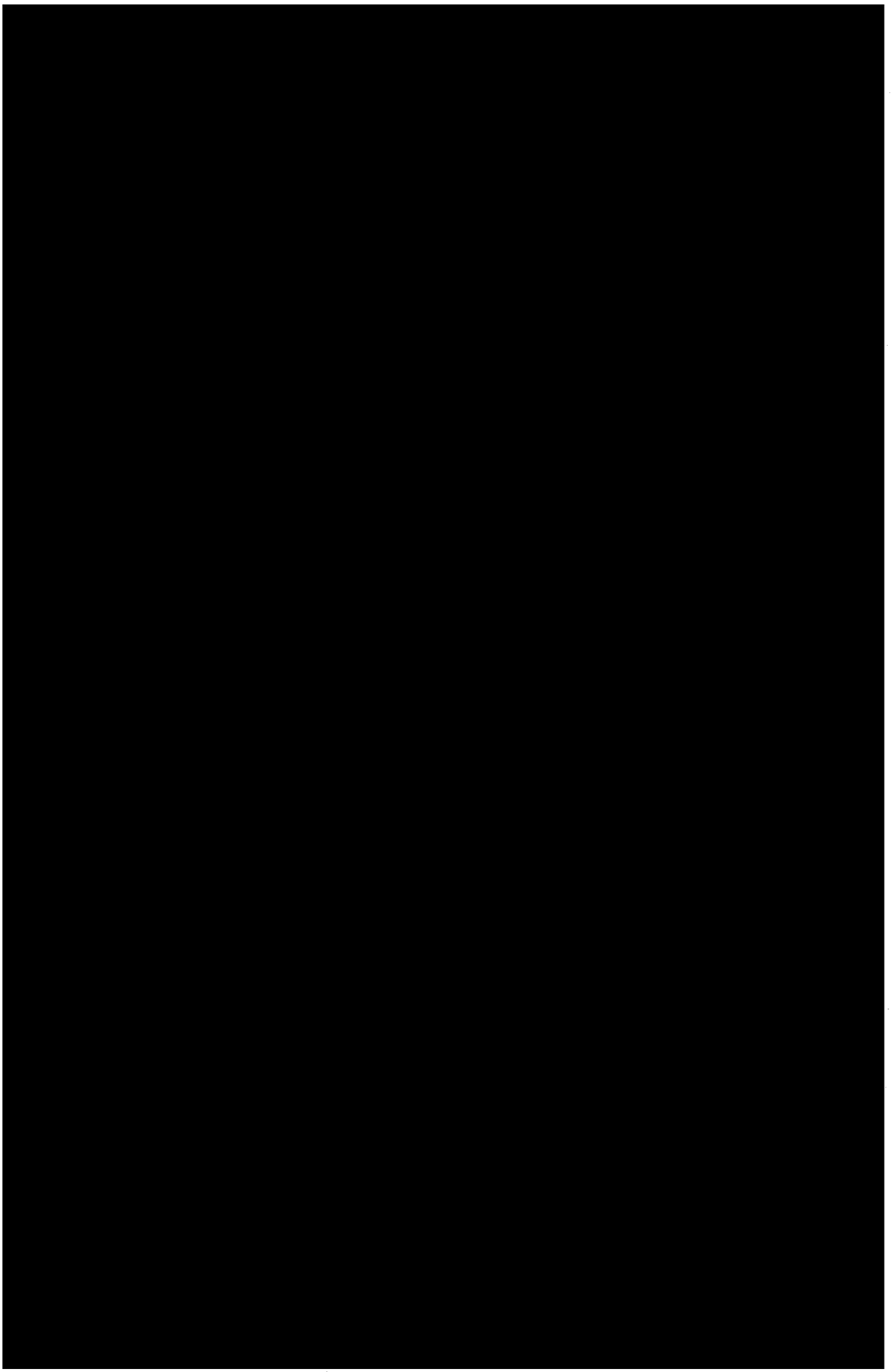


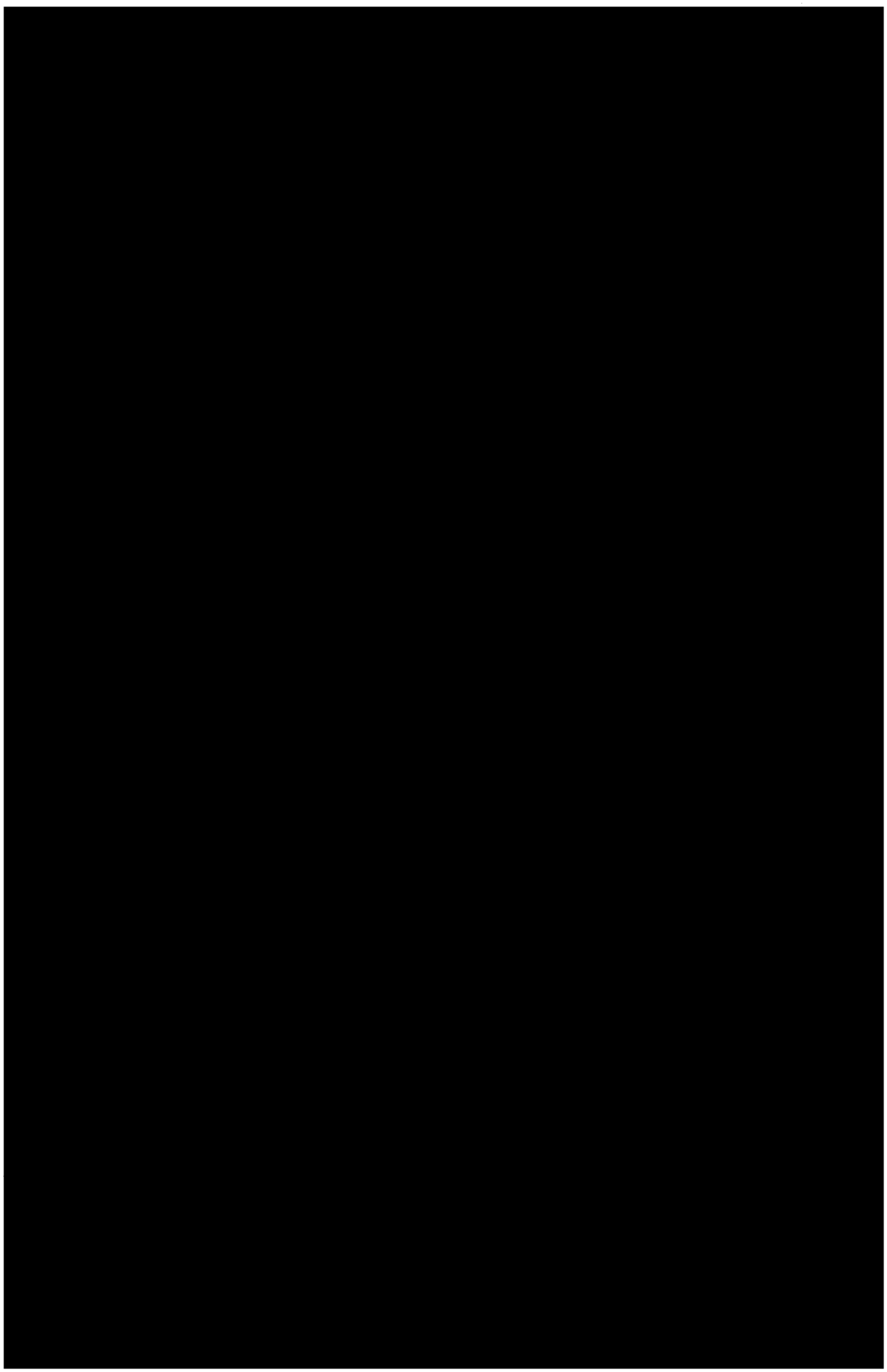












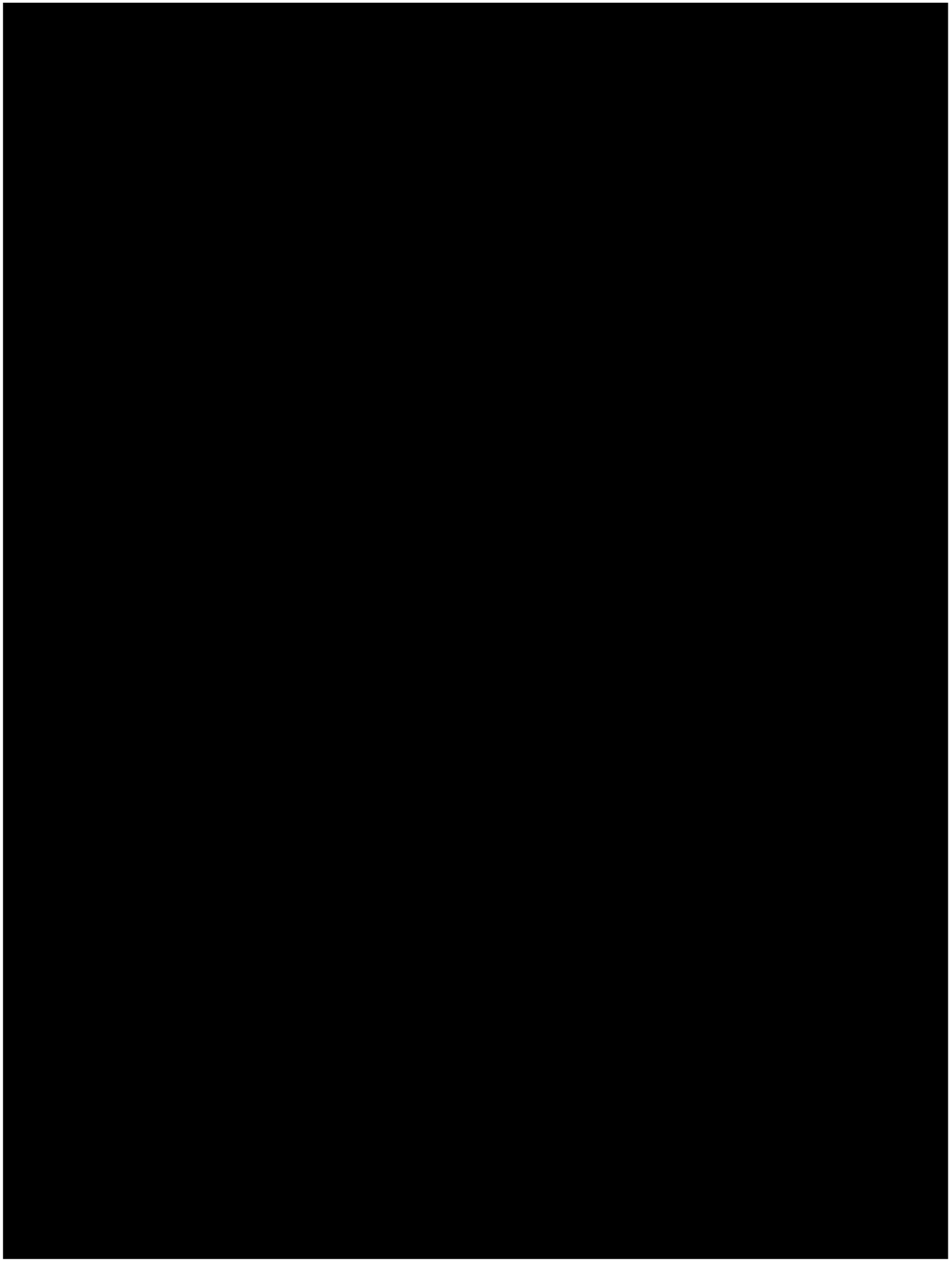


EXHIBIT 4
TO DEFENDANTS' MEMORANDUM OF LAW IN SUPPORT OF MOTION *IN LIMINE* TO EXCLUDE THE OPINIONS OF ROBERT H. KOPPE AND RANAJIT SAHU

UNITED STATES DISTRICT COURT
SOUTHERN DISTRICT OF INDIANA
INDIANAPOLIS DIVISION

UNITED STATES OF AMERICA, Plaintiff,	
STATE OF NEW YORK, STATE OF NEW JERSEY, STATE OF CONNECTICUT, HOOSIER ENVIRONMENTAL COUNCIL and OHIO ENVIRONMENTAL COUNCIL, Plaintiff-Intervenors,	1:99-cv-1693-LJM-JMS
-vs-	Indianapolis, Indiana May 13, 2009 8:00 a.m.
CINERGY CORP., PSI ENERGY, INC., and THE CINCINNATI GAS & ELECTRIC COMPANY, Defendants.	Volume III

BEFORE THE
HONORABLE LARRY J. McKINNEY

OFFICIAL REPORTER'S TRANSCRIPT OF

TRIAL PROCEEDINGS

Court Reporter: Cathy Easley Jones, RPR, FCRR
Official Court Reporter
46 East Ohio Street, Room 291
Indianapolis, IN 46204

PROCEEDINGS TAKEN BY MACHINE SHORTHAND
COMPUTER-AIDED TRANSCRIPTION

is not.

Q Implies what, sir?

A Implies that it is unique to us and it is not.

Q Well, we'll talk about that in a moment as well.

Now, can you tell me whether the combined methodology, as you understand it and as I am making reference to it, was used in the Ohio Edison case, the AEP case and the Illinois Power case?

A Yes, the same methodology was used in all those cases.

Q Who played -- did Dr. Rosen play Dr. Rosen in all those cases?

A I think not. There were a couple of cases where Dr. Sahu played Dr. Rosen, and it's hard for me to remember which ones were which. There were a couple of cases where Dr. Sahu did what Dr. Rosen has done in this case.

I'm not trying to quibble; but just to be clear, in those cases, I actually did part of what Dr. Rosen has done in this case, and Dr. Sahu did part.

Q In this case you're doing a little less and Dr. Rosen is doing a little bit more; is that right?

A That's correct.

Q Now, let me just talk about Ohio Edison for a minute because I think that was the first case; am I right, first report?

A If you say -- that first year I was working on Illinois

answered the question.

MR. GREEN: Let me move on with another question.

THE COURT: I'm not sure he has.

MR. GREEN: Pardon, sir?

THE COURT: I said I'm not sure he has answered the question.

MR. GREEN: I'm not sure he has either, but I think we get the drift. So let me continue.

BY MR. GREEN:

Q Now, Dr. Koppe, you've told us you've been studying and analyzing the availability of generating units for some 30 years; is that right?

A I think it's 35 now. It was 35 years ago.

Q 35 years. In that time, you've told us you've worked for various clients. You've worked for utilities, and I think you said you worked for one of the institutes of the utilities and so forth; is that correct?

A Yes, and state regulators.

Q State regulators as well.

Now, in all that work, Mr. Koppe, in all that work in all those years, you were not using your data or your techniques to predict increases in emissions for NSR permitting purposes, were you?

A No. I was calculating availability increases, and then the utilities took those results and did with them whatever

they did.

Q So it's fair to say that until you were retained by the Government in this case or in the first case back, let's say, in 2000, your availability analysis that you've described and taken us through was not combined or aligned with Dr. Rosen's type of calculations to predict an increase in emissions for NSR purposes; is that not right?

A Not that I know of. I did these availability analyses. People did what they did. I'm not aware of utilities having specifically used them for emissions increases.

Q So no one made use of your calculations as part of an emissions prediction prior to your coming to work here for the Government; is that right?

A Yes. I never worked on emissions; but as I say, I don't know what utilities did. I don't know of utilities using my results specifically to calculate emissions. They used them many times to calculate additional increased generation, increased electricity, but not emissions as far as I know.

Q And you're not here offering any opinion on emissions increases; is that not right?

A That is correct.

Q Now, Mr. Koppe, do you know whether the New Source Review regulations set forth any methodology at all for predicting whether the replacement of a component will increase emissions from a generating unit?

A I do not know.

Q And prior to 2000, using that date as the date when you went to work for the Government, had you ever seen any guidance published by the EPA which discussed how to make an emissions prediction?

MS. HIMMELHOCH: Objection. Goes beyond the scope of direct.

THE COURT: He can answer.

A Prior to 2000, I can't recall having seen anything about emissions or emissions calculations.

BY MR. GREEN:

Q And in arriving at your opinion, did you review whether the combined methodology, as I've described it, was consistent with any methodology used by the EPA in the years before you were retained in this case?

A No. I haven't looked at anything the EPA has done.

Q Don't you think it would have been sensible in forming your opinion to look at how EPA had made this assessment?

A No. I mean, EPA has guidelines how to calculate emissions once you know the increase in the amount of coal burned. Dr. Rosen and I calculated the amount of additional coal burned the same way I've been doing it for 35 years, the same way most utilities have done it. There's nothing new here.

The EPA guidelines say take the increased amount of coal and multiply it by these factors, and we calculated the

increase in the amount of coal burned the same way everyone does it.

Q The EPA guidelines don't mention the combined methodology, do they?

A No. They start with coal burned and go from there.

I'm sorry, the AP42 guidelines, which is what I'm familiar with. I don't know what else there might be.

Q Now, the combined methodology has never been published in a peer review journal; is that not correct?

A I'm not aware of any peer review journals in the utility business. I've never seen anything in any utility peer review journal.

Q Can you point me to any articles or other material published prior to the filing of this case, sir, where the reliability or accuracy of the combined methodology as a way to make NSR emissions predictions has been published?

A I don't recall any such publication, no.

Q And, Mr. Koppe, you've not been retained to offer any opinion that any component replacement activity undertaken by Cinergy at these six generating units resulted in a violation of the Clean Air Act or the New Source Review regulations; is that not correct?

A No. I've been -- I calculated availability increases and changes in capability and heat rate, and Dr. Rosen went from there.

EXHIBIT 5
TO DEFENDANTS' MEMORANDUM OF LAW IN SUPPORT OF MOTION *IN LIMINE* TO EXCLUDE THE OPINIONS OF ROBERT H. KOPPE AND RANAJIT SAHU

UNITED STATES DISTRICT COURT
SOUTHERN DISTRICT OF INDIANA
INDIANAPOLIS DIVISION

UNITED STATES OF AMERICA, Plaintiff,	)
STATE OF NEW YORK, STATE OF NEW JERSEY, STATE OF CONNECTICUT, HOOSIER ENVIRONMENTAL COUNCIL and OHIO ENVIRONMENTAL COUNCIL, Plaintiff-Intervenors,	)1:99-cv-1693-LJM-JMS
-vs-	)Indianapolis, Indiana)May 13, 2008)8:00 a.m.
CINERGY CORP., PSI ENERGY, INC., and THE CINCINNATI GAS & ELECTRIC COMPANY, Defendants.	)Volume 7

BEFORE THE
HONORABLE LARRY J. McKINNEY

OFFICIAL REPORTER'S TRANSCRIPT OF

TRIAL PROCEEDINGS

Court Reporter: Cathy Easley Jones, RPR, FCRR
Official Court Reporter
46 East Ohio Street, Room 291
Indianapolis, IN 46204

PROCEEDINGS TAKEN BY MACHINE SHORTHAND
COMPUTER-AIDED TRANSCRIPTION

A P P E A R A N C E S

Q In the early stages of this litigation before this formula was created, you participated in a number of conference calls to discuss the kind of formula or methodology or approach you were going to take in this case, didn't you?
A Yes, that's right.
Q And Mr. Koppe participated in those conference calls; is that correct?
A He often did. That's correct.
Q Mr. Hekking participated in those conference calls, correct?
A Yes, he did sometimes. Less frequently than Mr. Koppe.
Q Tell us who else participated in those conference calls?
A There were some calls in which a Mr. -- I'm sorry -- Dr. Sahu participated and then, as far as I remember, several of the attorneys involved in the Ohio Edison case participated in those initial phone calls. I don't think any of those attorneys are present here today.
Q But those are Justice Department attorneys involved in NSR cases, right, sir?
A Some were Justice Department attorneys. Some were New York state attorneys. Some might have been attorneys from other states, Attorney Generals.
Q And you would characterize those calls as brainstorming,

correct?
A Yes. We had discussions, give and take of various views on what an appropriate methodology would be under the NSR regulations; and over time, that methodology developed, and I think I made a contribution to developing it.
Q Well, the methodology didn't instantly leap to mind based

on your 30 years of experience.

You sat around and you said let's review all this and let's think about what's the best way to make these computations at this point in time, right, sir?

A I would say we tried to figure out what the best way to make the computations consistent with the NSR regulations. This point in time isn't really relevant. Once you have the regulations, it doesn't matter when you're doing it. So, yes, I absolutely agree. We're trying to figure out the best way of meeting the needs of the regulations.

Q And you're brainstorming or thinking about this formula -- or the brainstorming I should say -- that led to this formula went on for about six months, right?

A I would say it went on and off for about six months, yes, in the first case I did.

Q In the course of brainstorming what formula you were going to use in this litigation, you did consider and reject some other methods; isn't that correct?

A There were probably some thoughts that I didn't end up

following. I'm sure there must have been. Anyway, this is the general scheme that emerged based on again standard industry approaches to these kind of issues. Obviously some issues were more straightforward. Some were less straightforward.

Q Sir, there weren't just thoughts you considered and rejected. There were actually emissions calculations that you considered and rejected; isn't that true?

A No, I don't think that's true. No. I don't remember ever being presented with some explicit emissions calculation

EXHIBIT 6
TO DEFENDANTS' MEMORANDUM OF LAW IN SUPPORT OF MOTION *IN LIMINE* TO EXCLUDE THE OPINIONS OF ROBERT H. KOPPE AND RANAJIT SAHU

United States Court of Appeals

For the Seventh Circuit
Chicago, Illinois 60604

December 29, 2010

Before

FRANK H. EASTERBROOK, *Chief Judge*

RICHARD A. POSNER, *Circuit Judge*

ILANA DIAMOND ROVNER, *Circuit Judge*

Nos. 09-3344, 09-3350, 09-3351

UNITED STATES OF AMERICA,
Plaintiff-Appellee/
Cross-Appellant,

and

STATE OF NEW YORK, *et al.*,
Plaintiffs-Intervenors-Appellees/
Cross Appellants,

v.

CINERGY CORPORATION, *et al.*,
Defendants-Appellants/
Cross-Appellees.

Appeals from the United States District Court for the Southern District of Indiana, Indianapolis Division.

No. 1:99-cv-01963-LJM-JMS

Larry J. McKinney, *Judge.*

ORDER

On November 29, 2010, plaintiffs-appellees United States of America and State of New York, *et al.*, filed a petition for rehearing, and on December 23, 2010, defendants-appellants Cinergy Corporation, *et al.*, filed a response to the petition for rehearing. All of the judges on the panel have voted to deny the petition. The petition is therefore DENIED.

EXHIBIT 7
TO DEFENDANTS' MEMORANDUM OF LAW IN SUPPORT OF MOTION *IN LIMINE* TO EXCLUDE THE OPINIONS OF ROBERT H. KOPPE AND RANAJIT SAHU

IN THE UNITED STATES DISTRICT COURT
FOR THE NORTHERN DISTRICT OF ALABAMA
SOUTHERN DIVISION

UNITED STATES OF AMERICA,	)	
Plaintiff,	)	
	)	
ALABAMA ENVIRONMENTAL COUNCIL,	)	
	)	
Plaintiff-Intervenor	)	
v.	)	**Civil Action No. 2:01-CV-152-VEH**
	)	
ALABAMA POWER COMPANY,	)	
	)	
Defendant.	)	

FINAL JUDGMENT ORDER

Pending before the Court are (1) Alabama Power Company's Motion to Strike Paragraph 5 of Dr. Ranajit Sahu's ("Sahu") Declaration and Exclude this New Opinion From Evidence (doc. 312) and (2) Alabama Power's Motion Limine to Exclude on *Daubert* Grounds (doc. 292). For the reasons explained in the accompanying memorandum opinions, Alabama Power's Motion to Strike is **GRANTED** and Alabama Power's Motion in Limine insofar as it relates to Sahu and Mr. Robert H. Koppe ("Koppe") is **GRANTED**.

Pursuant to Federal Rule of Civil Procedure 56(f)(3), a court may, after giving notice and a reasonable time to respond, "consider summary judgment on its own after identifying for the parties material facts that may not be genuinely in dispute."

In a teleconference held on January 5, 2011, the Court put the parties on notice that, pursuant to Rule 56(f), the Court could grant summary judgment as to all claims if there was no admissible evidence as to net emissions increases. (Doc. 357 at 19). The Court gave both parties the opportunity to indicate any areas that had not been fully addressed so a briefing schedule could be entered. *Id.* at 6.

The Court has previously ruled that Plaintiffs bear the burden of proving that the projects at issue were "major modifications," meaning "a physical change that resulted in a net emissions increase." (Doc. 198 at 39); *see Envtl. Def. v. Duke Energy Corp.*, 549 U.S. 561, 569 (2007). This requirement is based on the Alabama State Implementation Plan rules applicable in this case, which provide that a pre-construction permit is only required for a "major modification . . . that would result in a significant net emissions increase" (Ala. Admin. Code r. 335-3-14.04(2)(b)) in excess of 40 tons per year (Ala. Admin. Code r. 335-3-14.04(2)(w)) (the "threshold limit").

At the hearing held on February 18, 2011, Plaintiffs admitted that, if Sahu and Koppe were excluded, they could not prove that net emissions would increase in an amount above the threshold limit as a result of the modifications at issue. (Doc. 370, Tr. 351). Therefore, having given the parties notice and a reasonable time to respond, the Court finds that Alabama Power is entitled to summary judgment on all claims.

Plaintiffs' case is **HEREBY DISMISSED WITH PREJUDICE.**

SO ORDERED this the 14th day of March, 2011.

VIRGINIA EMERSON HOPKINS
United States District Judge

UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF MICHIGAN

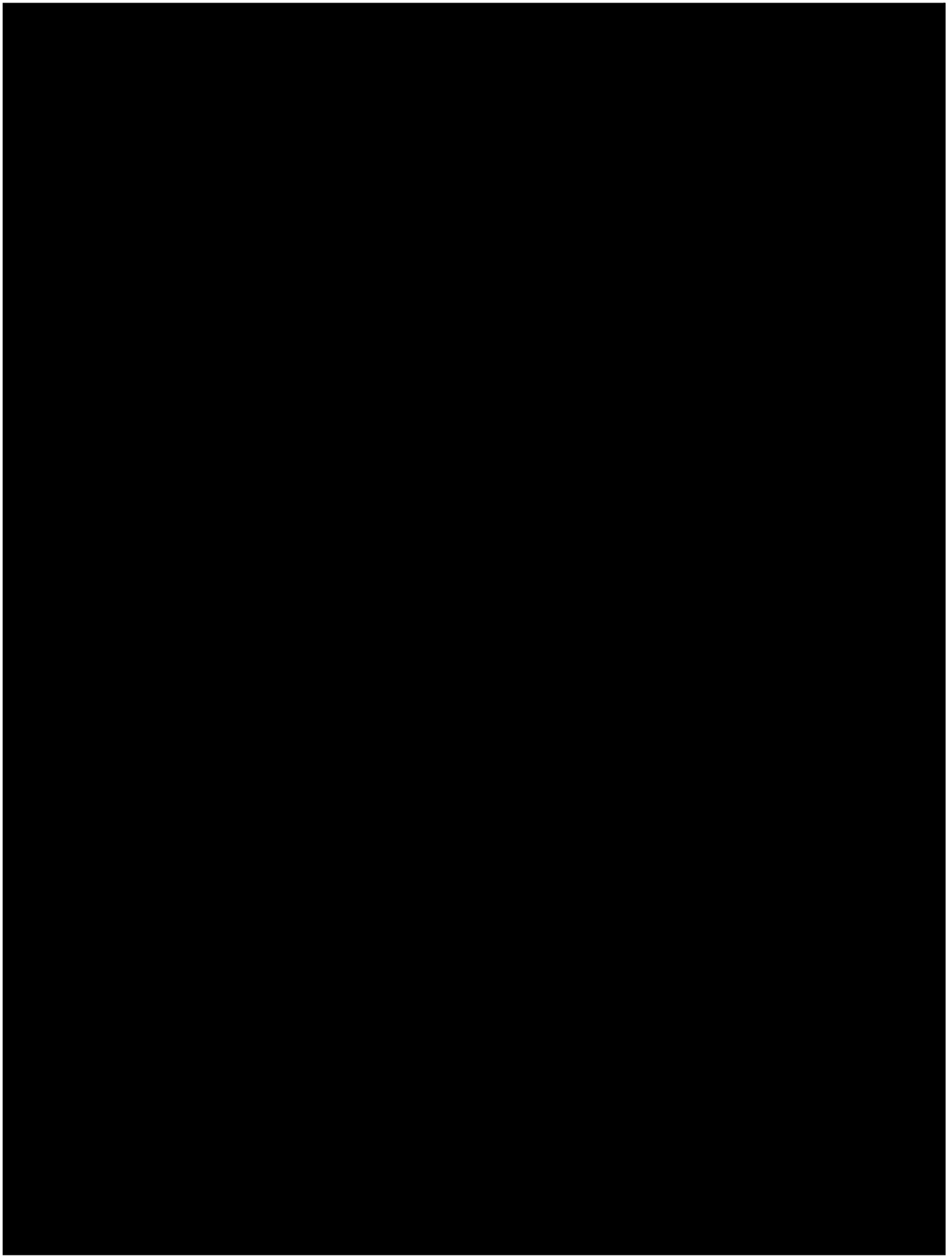
UNITED STATES OF AMERICA, Plaintiff, and NATURAL RESOURCES DEFENSE COUNCIL, INC. AND SIERRA CLUB, Intervenor-Plaintiffs, v. DTE ENERGY COMPANY AND DETROIT EDISON COMPANY, Defendants.	Civil Action No. 2:10-cv-13101-BAF-RSW Judge Bernard A. Friedman Magistrate Judge R. Steven Whalen

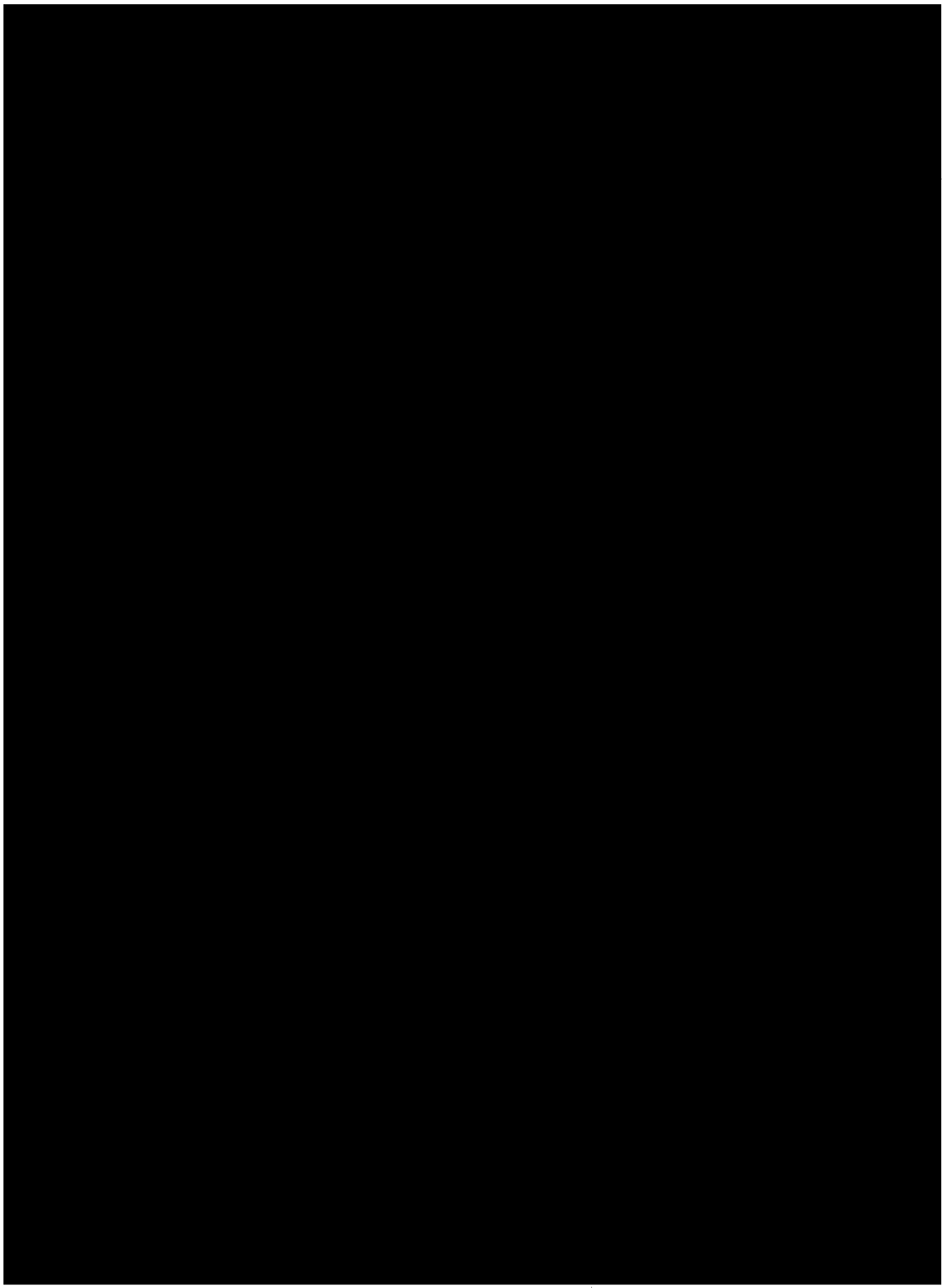
DEFENDANTS' MEMORANDUM OF LAW IN SUPPORT OF MOTION *IN LIMINE* TO EXCLUDE THE OPINIONS OF ROBERT H. KOPPE AND RANAJIT SAHU

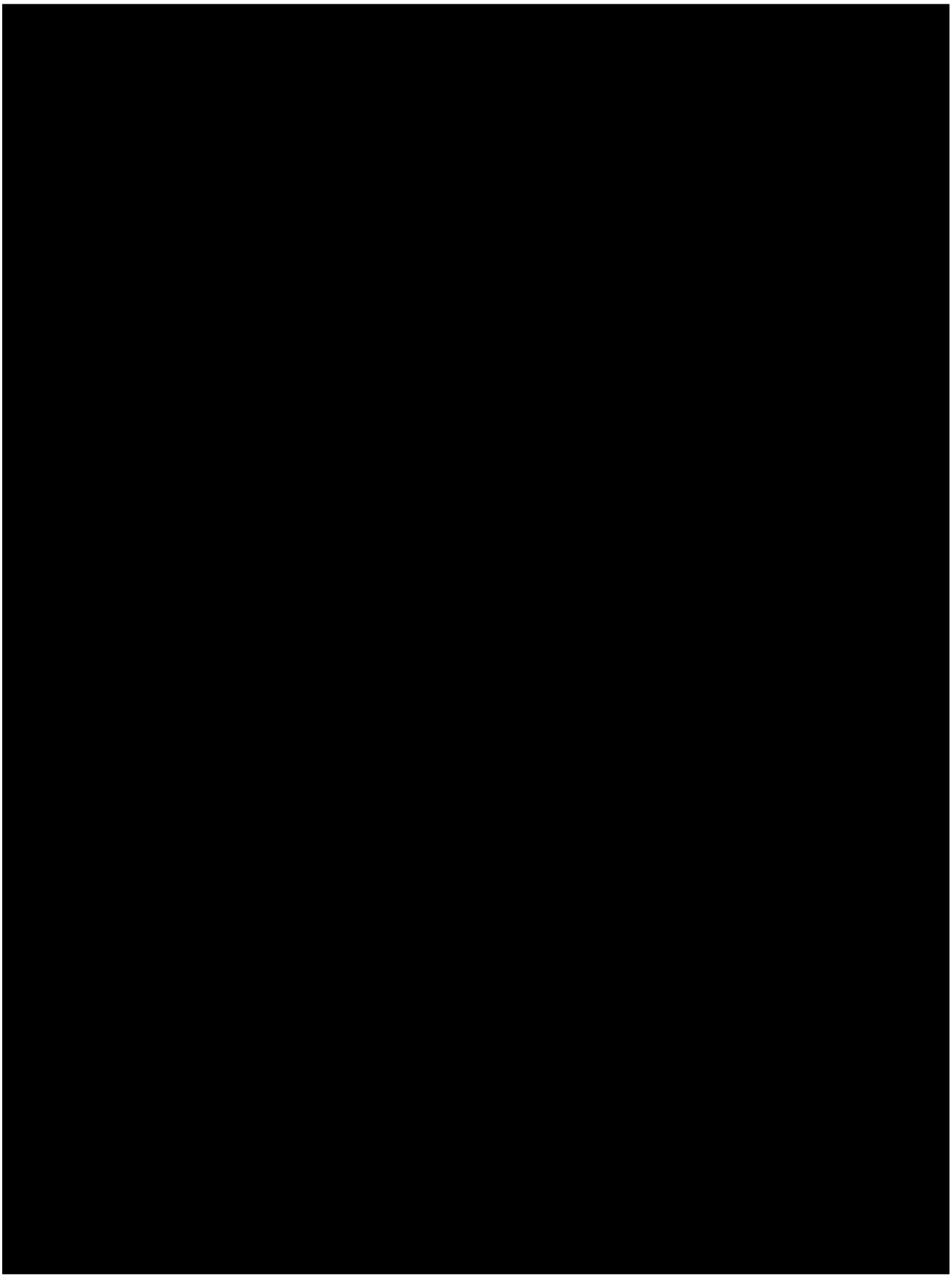
FILED UNDER SEAL
CONFIDENTIAL/TRADE SECRET - SUBJECT TO PROTECTIVE ORDER

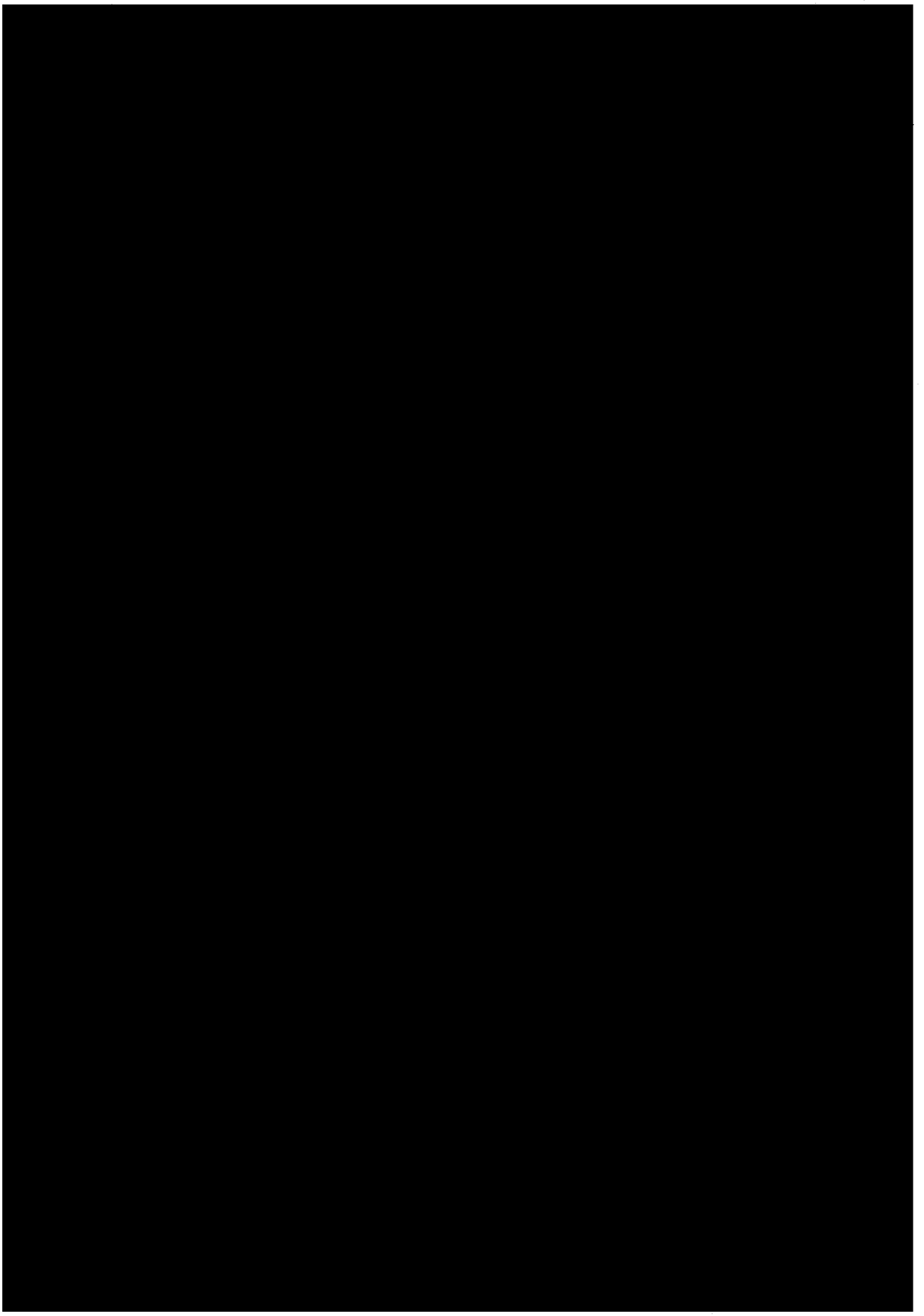
EXHIBIT 8

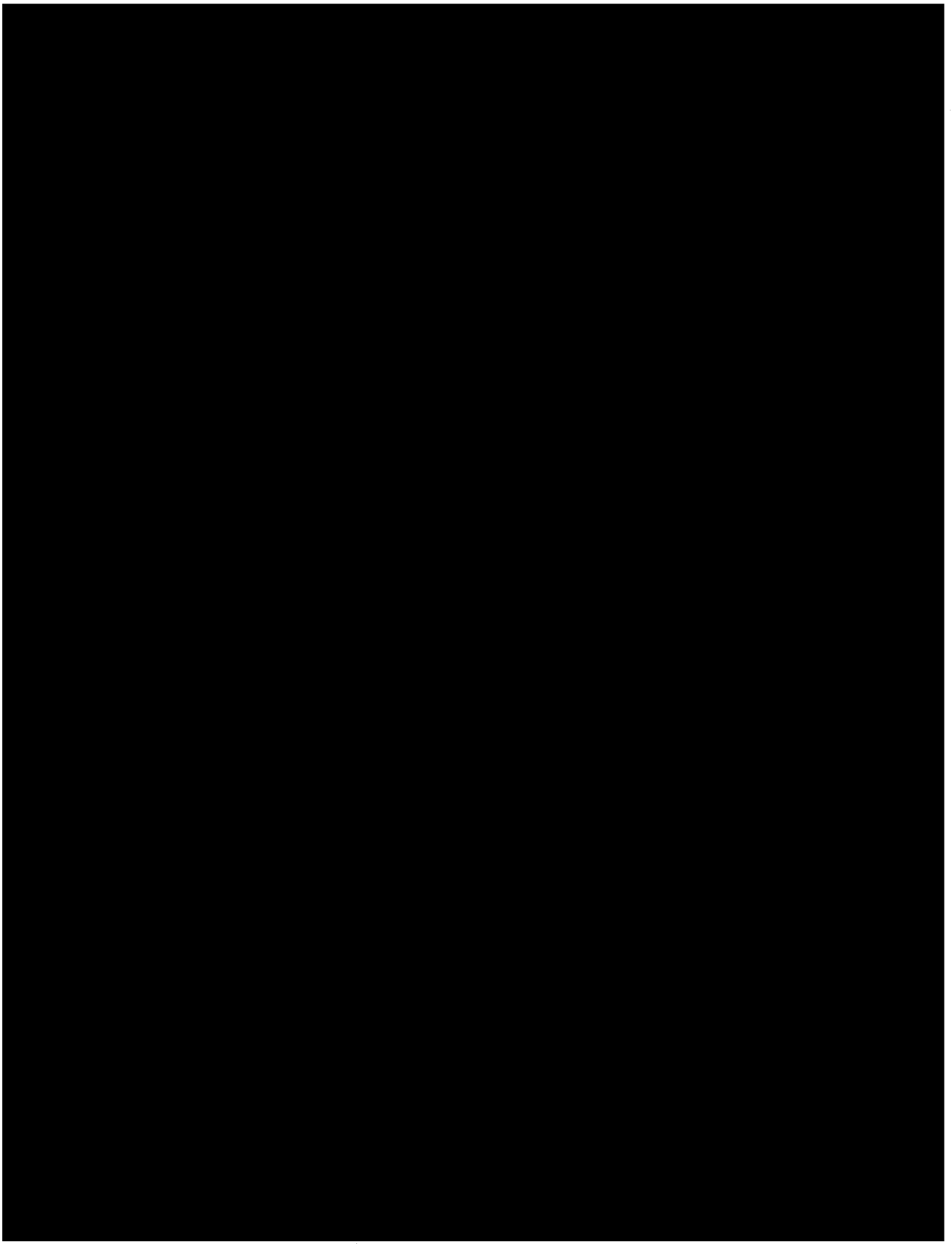
Expert Report of Robert H. Koppe (Apr. 22, 2011)











BASIS FOR RORs FOR RUN 2

The ROR of Monroe 2 was 12.2% during the SO2 baseline period and was 14.6% during the NOx baseline period.[24] The Company forecast that the ROR for the unit would be 8.3% in 2011 and 8.7% in 2012 and 2013.[25] But for the major work done during the 2010 planned outage of Monroe 2, the ROR of that unit would not have decreased from the values achieved during the baseline periods; in fact, it would have increased.

The preceding means that all of the decrease in the ROR that the Company expected was due to the 2010 work: but for that work, none of the decrease would have occurred. In fact, but for that work, the Company should have expected that the ROR for Monroe 2 would increase.

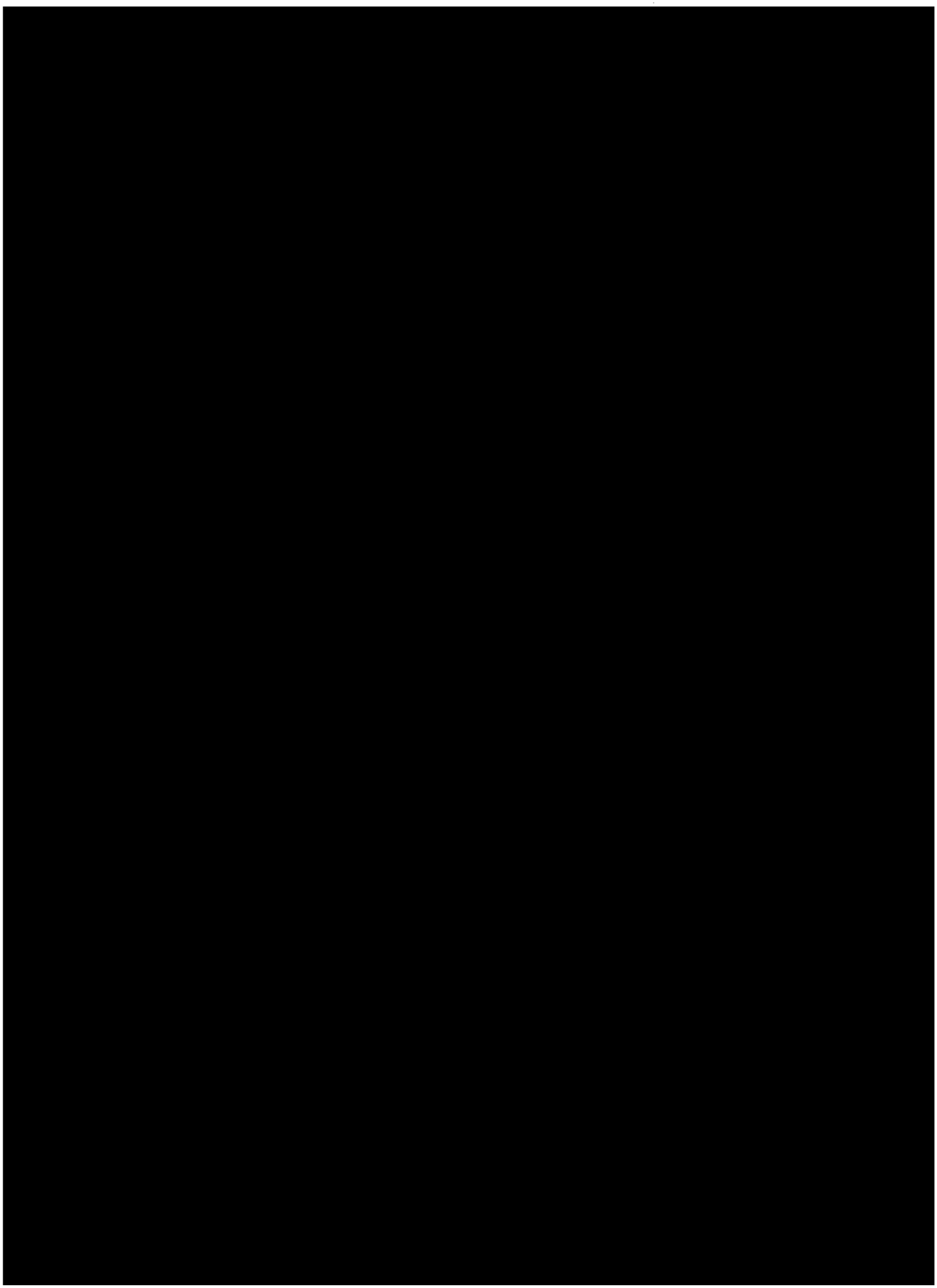
Based on the preceding, it would have been reasonable to conclude that the RORs to be used in run 2 should have been considerably higher than 12.2% or 14.6%. In order that Mr. Hayet's PROMOD analyses be conservative, as were the analyses done by Dr. Sahu, I decided that Mr. Hayet should use RORs of 12.2% and14.6% in his analyses.

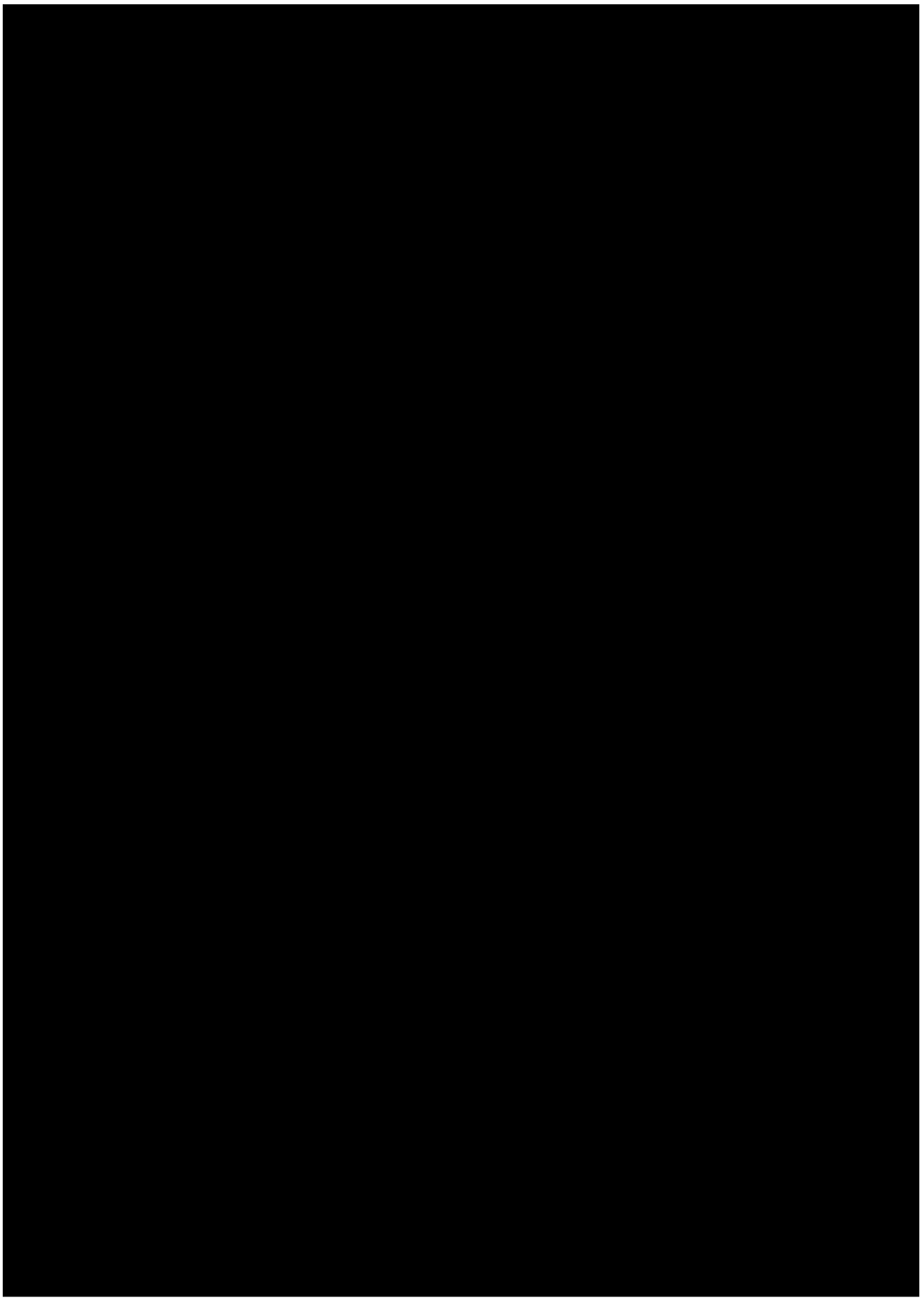
MR. HAYET'S RESULTS

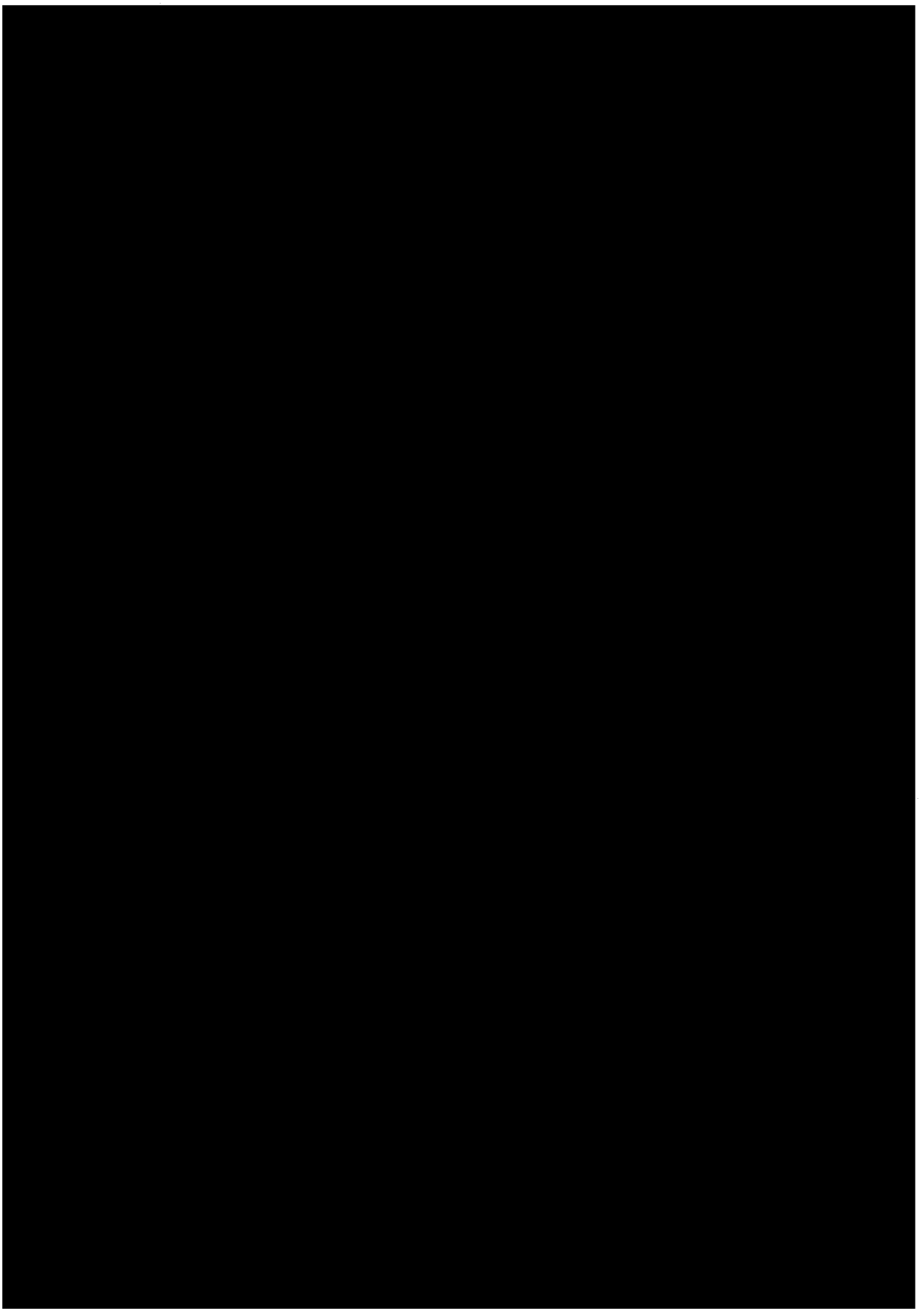
Mr. Hayet's analyses showed that, even with no reduction in ROR, the generation by the unit would still be higher during 2011-2013 than it had been during the baseline periods. This is because the Company expected the utilization of the unit would be greater in 2011-2013 than it was during the baseline periods. However, the amount the unit was forecast to generate in the future was much higher if the ROR decreased than it was if the ROR stayed the same. This difference in generation is the portion of the total increase that is due to the reduction in ROR.

But for the project, the ROR for Monroe 2 would not have been expected to decrease. But for the project, the increase in generation by Monroe 2 would have been much less. (In fact, as I explained above, the increasing frequency of outages due to the economizer alone, if the economizer had not been replaced, likely would have completely offset any increase in generation that otherwise might have resulted from other factors.) The results of Mr. Hayet's analyses show that the reduction in ROR at Monroe 2 caused a large increase in the amount of generation by the unit. This is consistent with my expectations and is generally consistent with the Dr. Sahu's and my results using approach 1.

[24] My calculations based on data the Company reported to NERC GADS
[25] The Company's letter to the EPA, dated 6/3/10







UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF MICHIGAN

UNITED STATES OF AMERICA, Plaintiff, and NATURAL RESOURCES DEFENSE COUNCIL, INC. AND SIERRA CLUB, Intervenor-Plaintiffs, v. DTE ENERGY COMPANY AND DETROIT EDISON COMPANY, Defendants.	Civil Action No. 2:10-cv-13101-BAF-RSW Judge Bernard A. Friedman Magistrate Judge R. Steven Whalen

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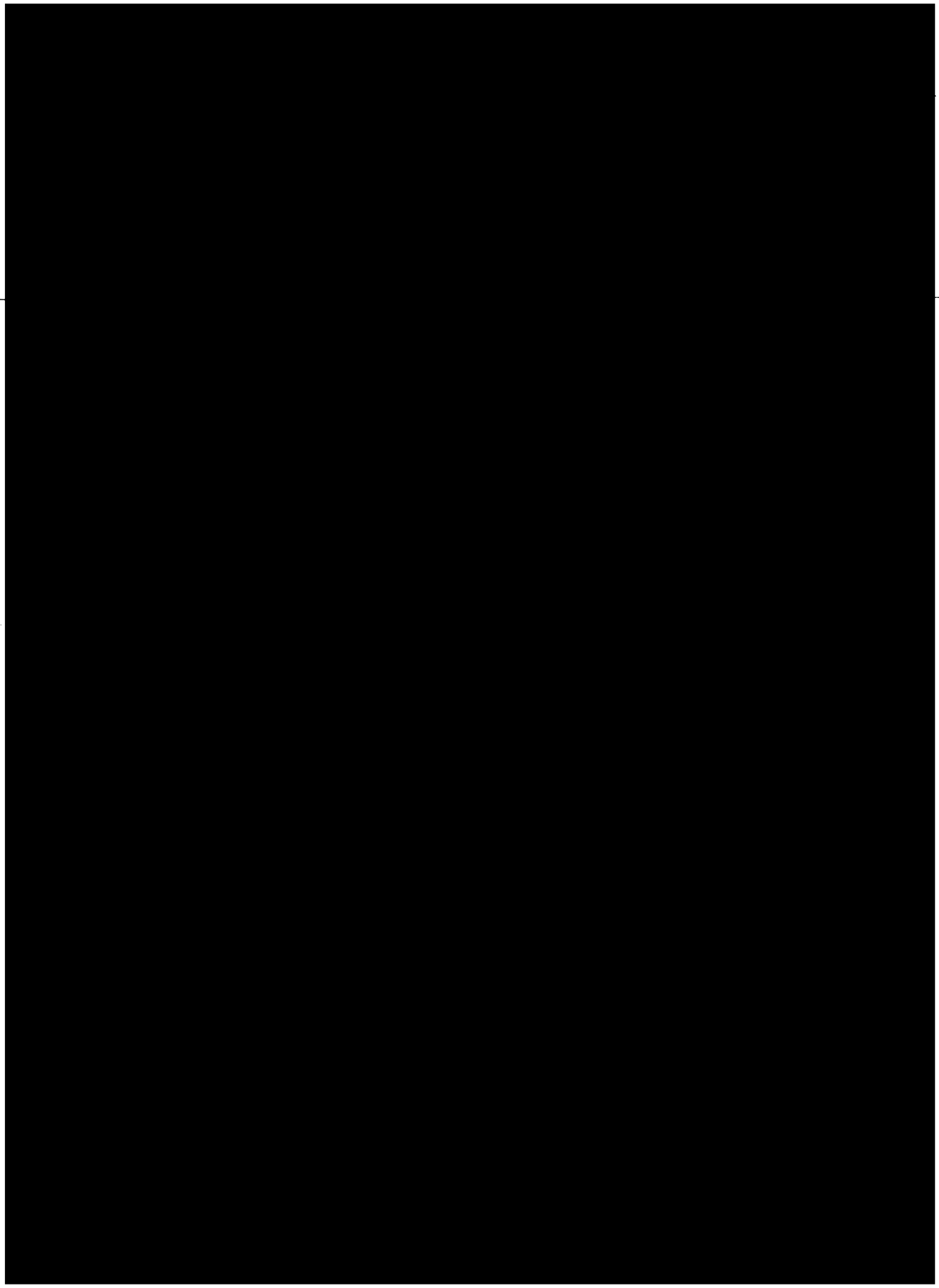
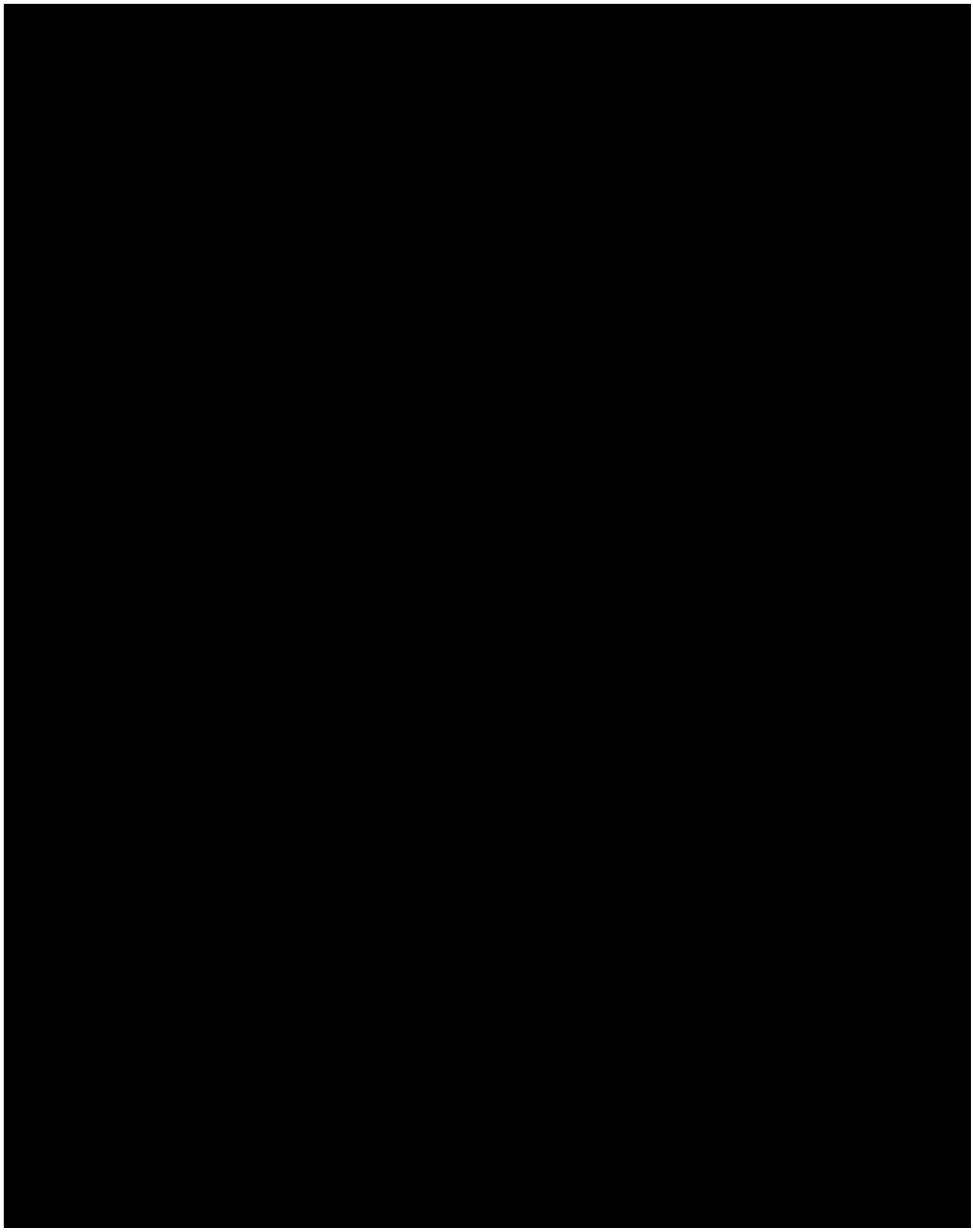
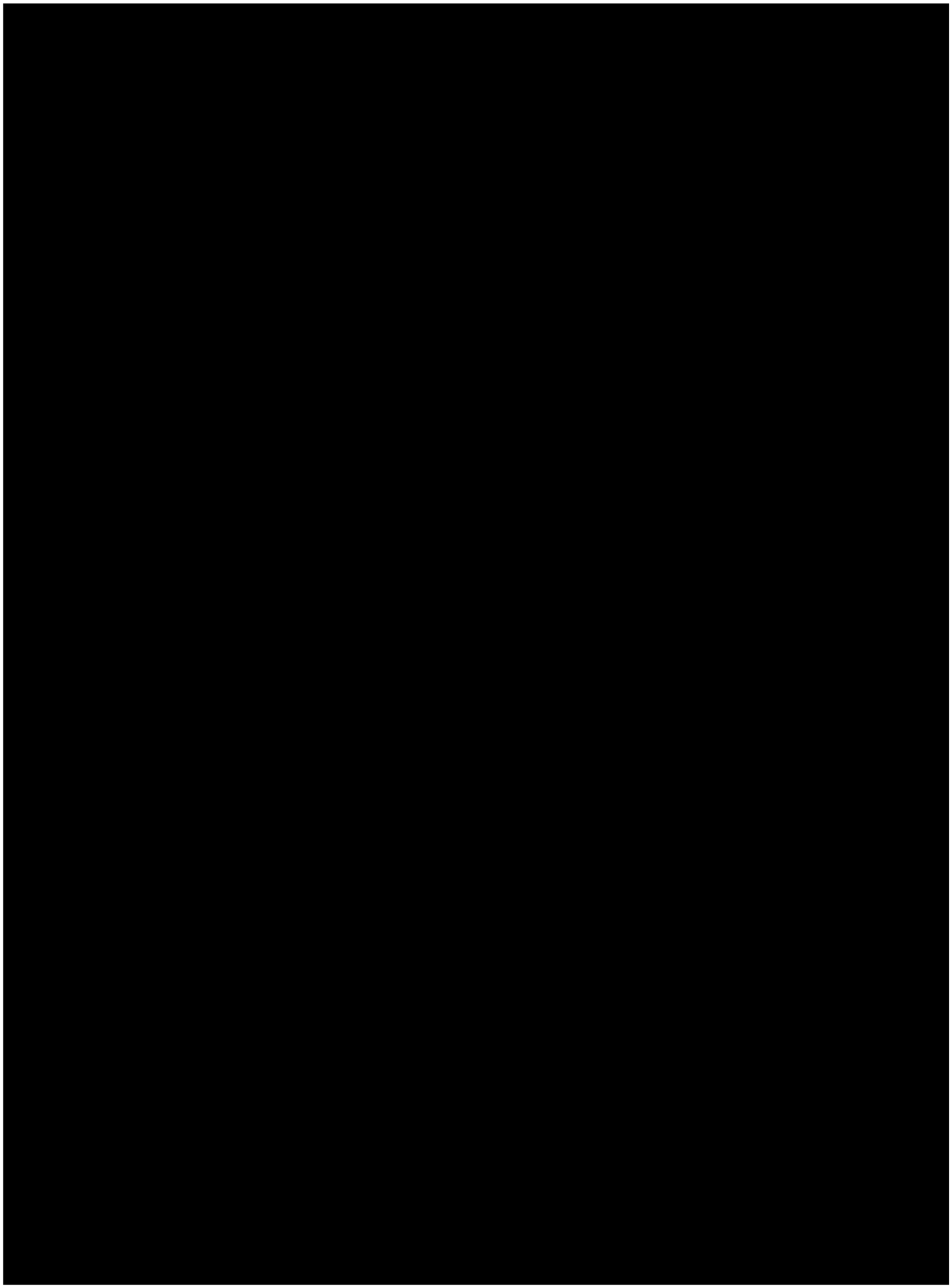
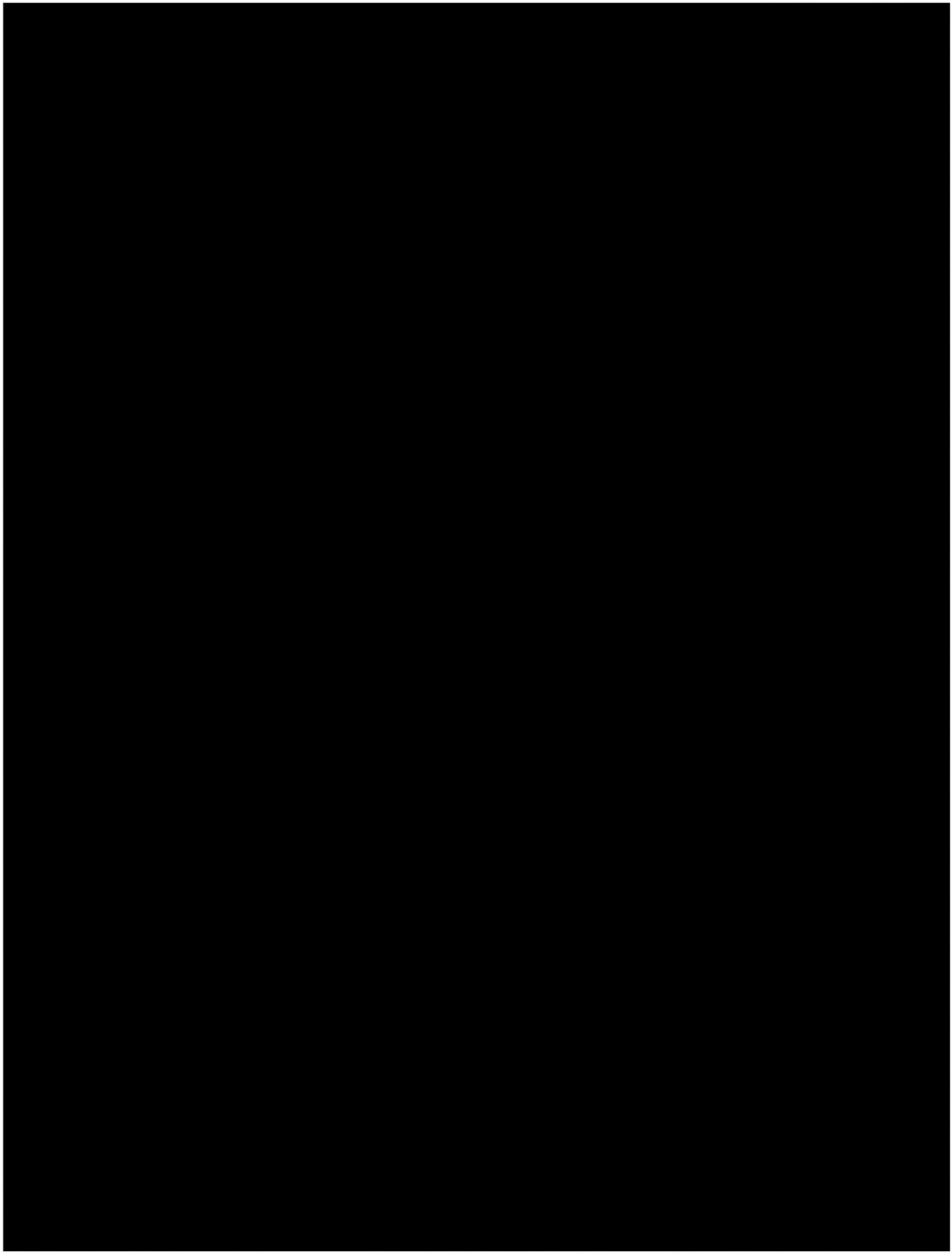
EXHIBIT 9

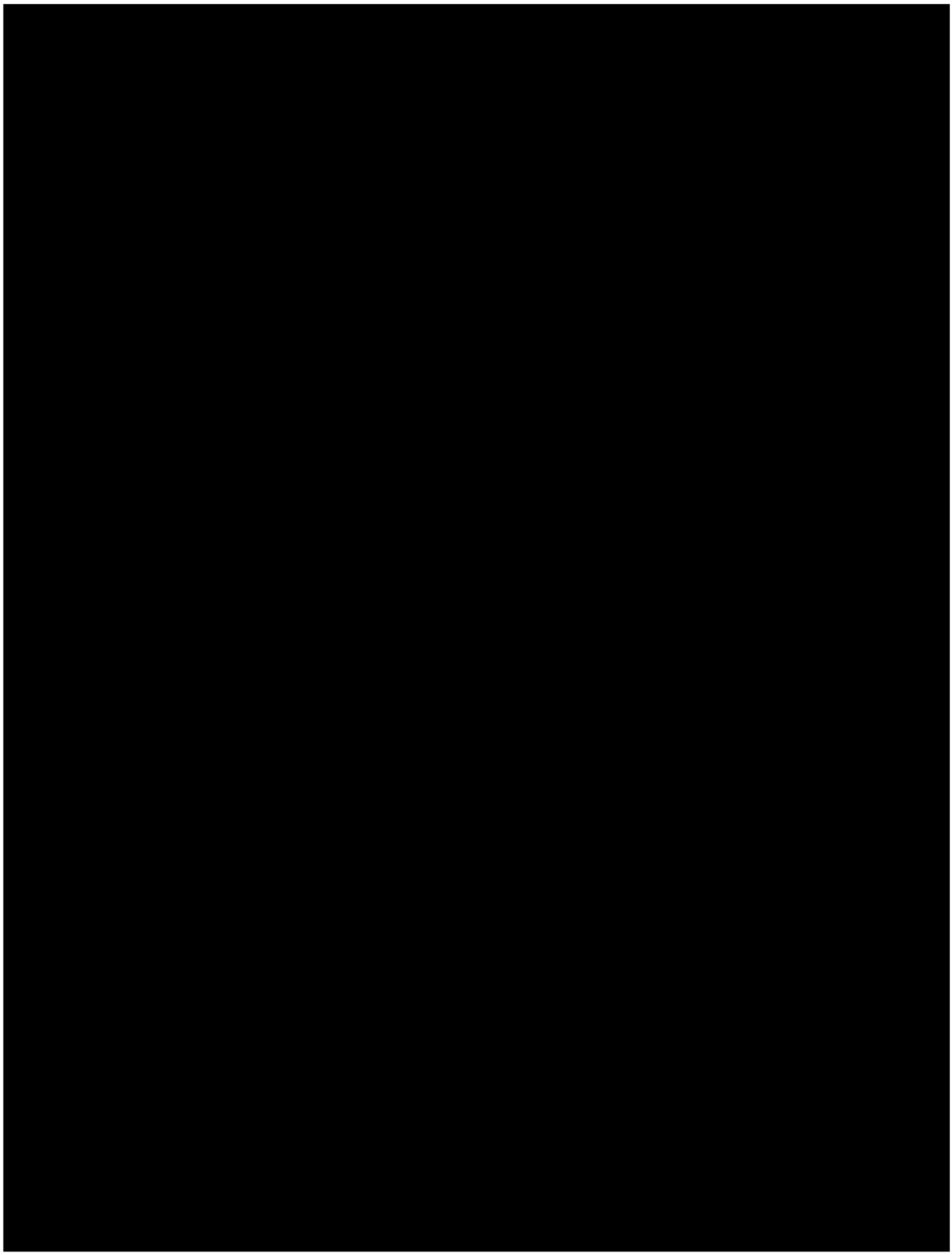
Supplemental Expert Report of Mike King (June 3, 2011)

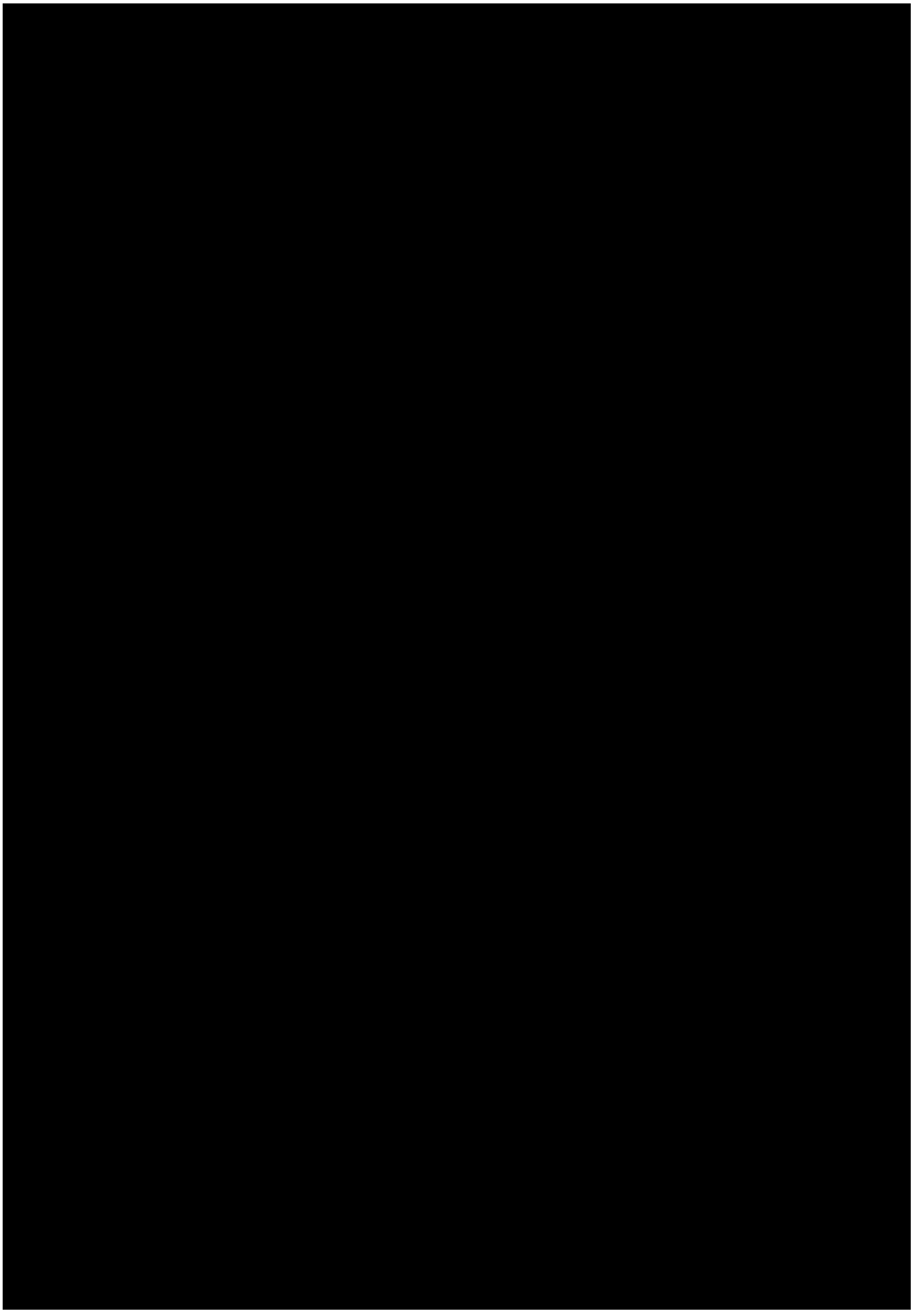


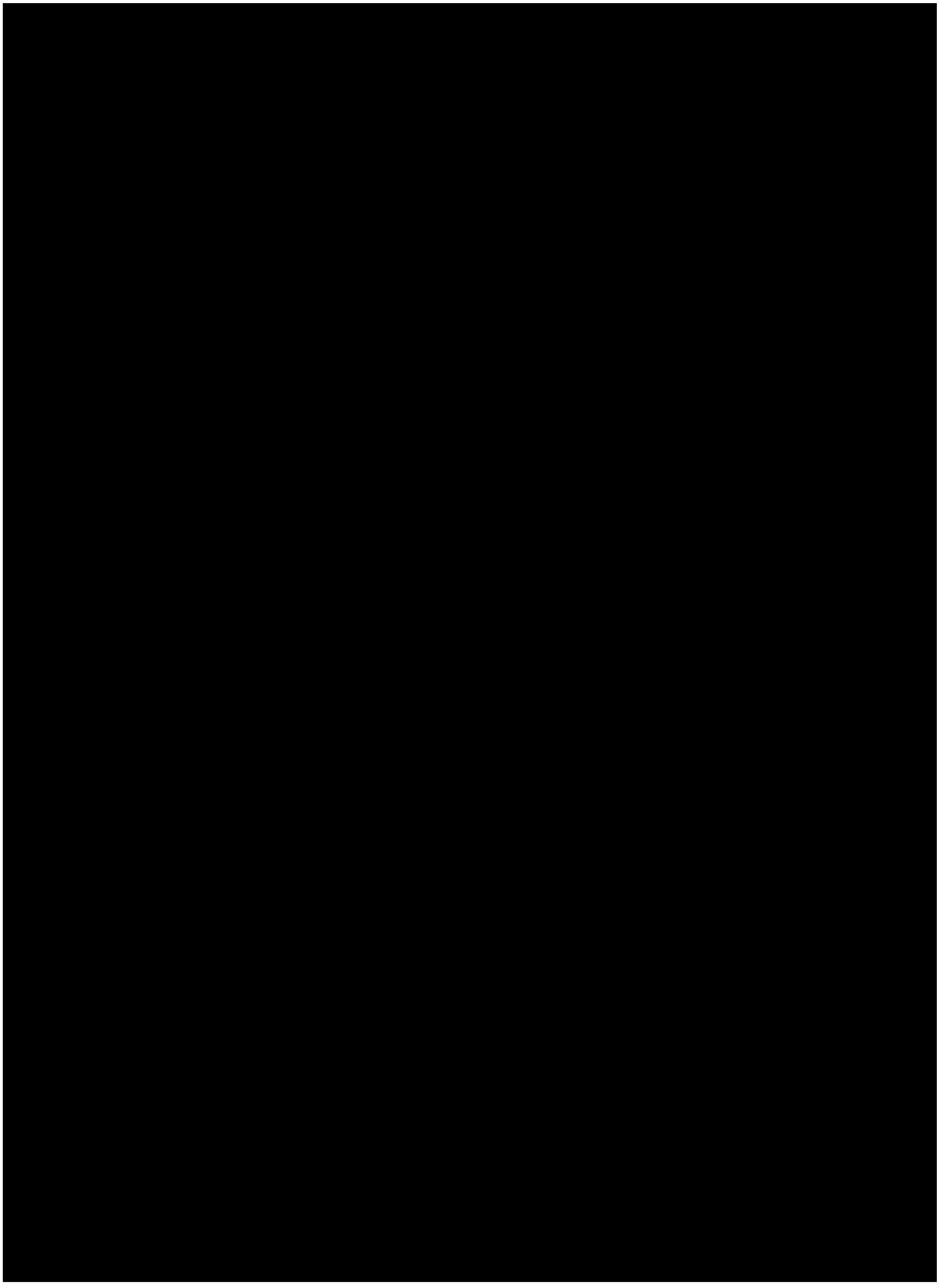


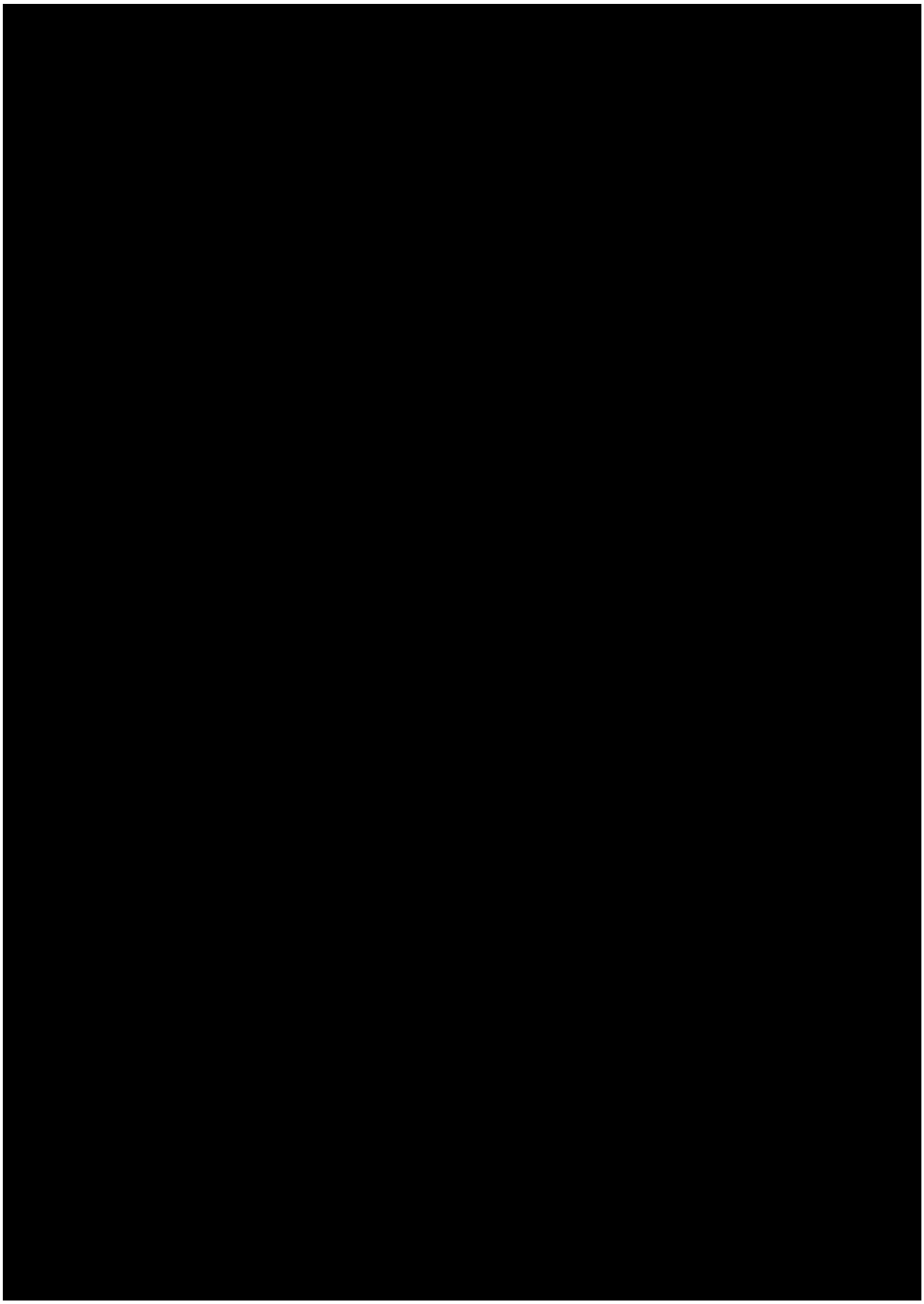


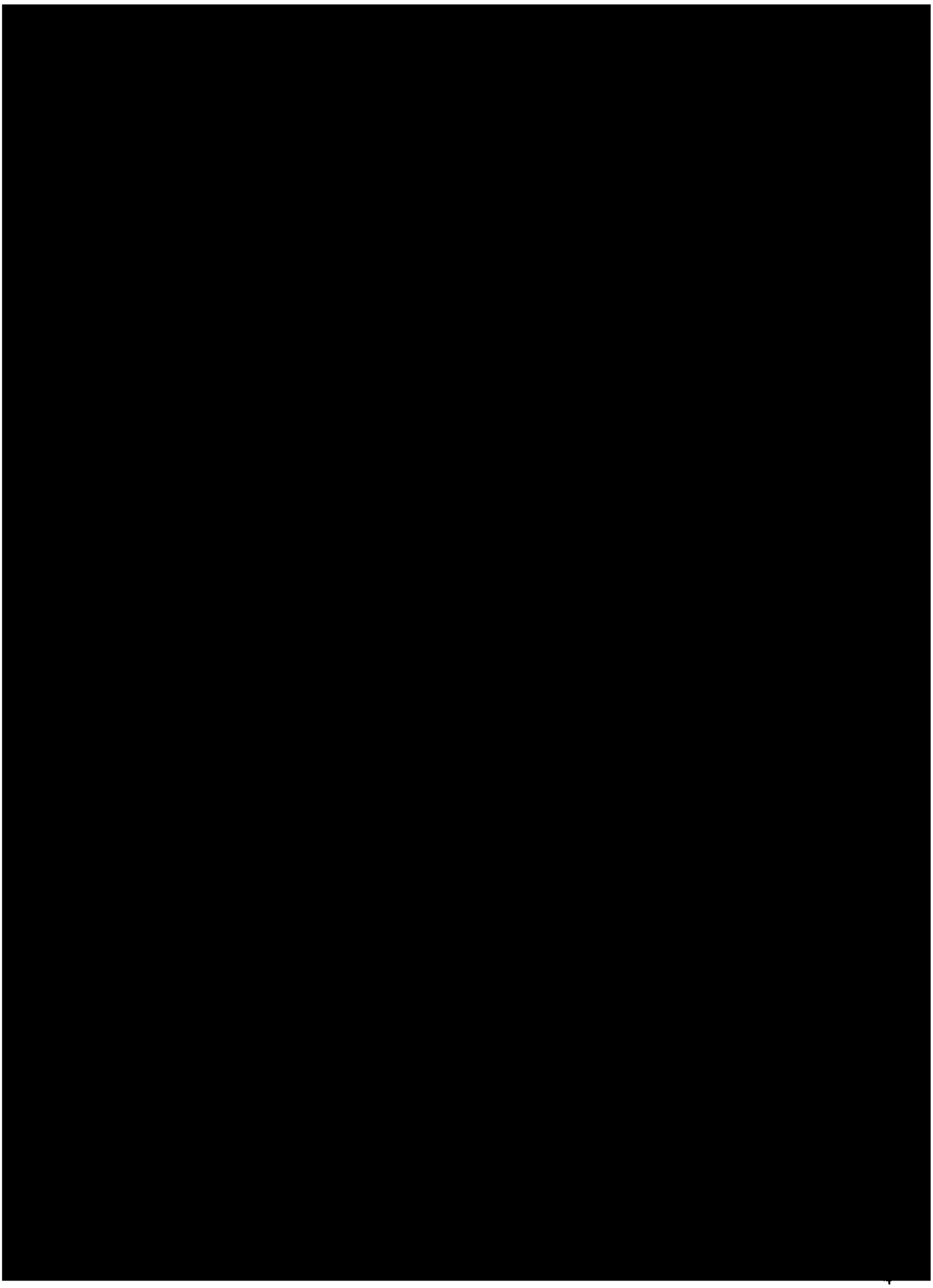


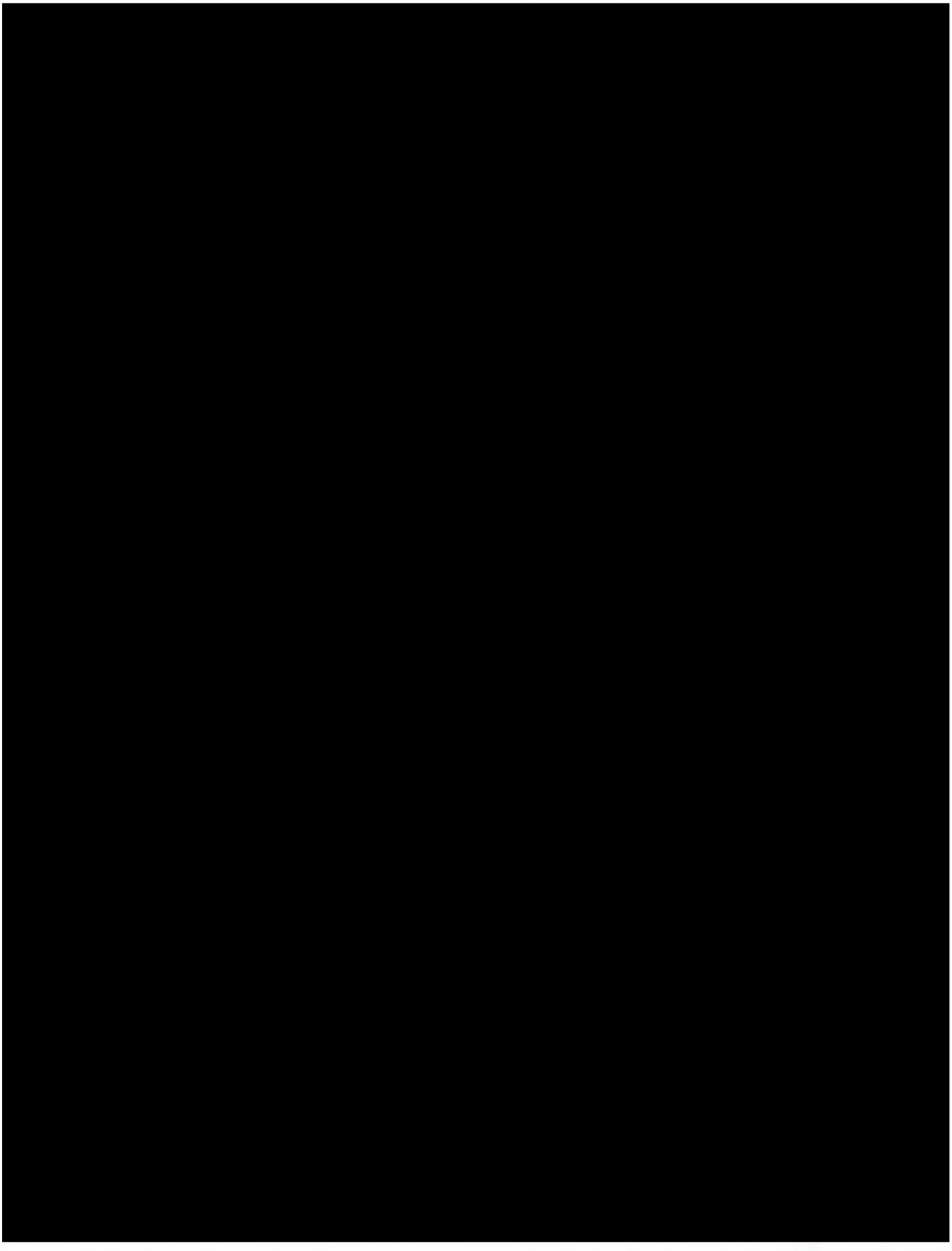


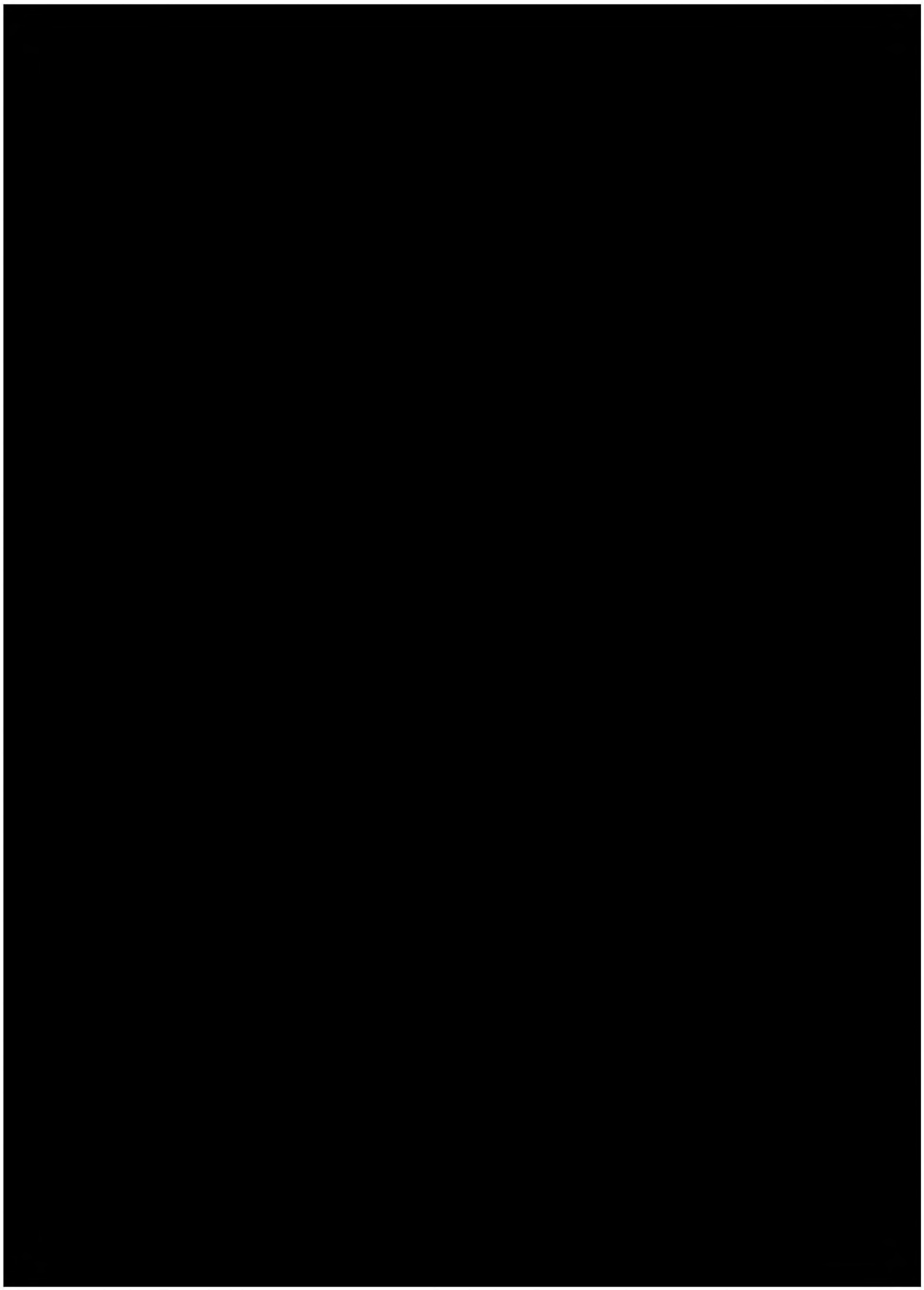


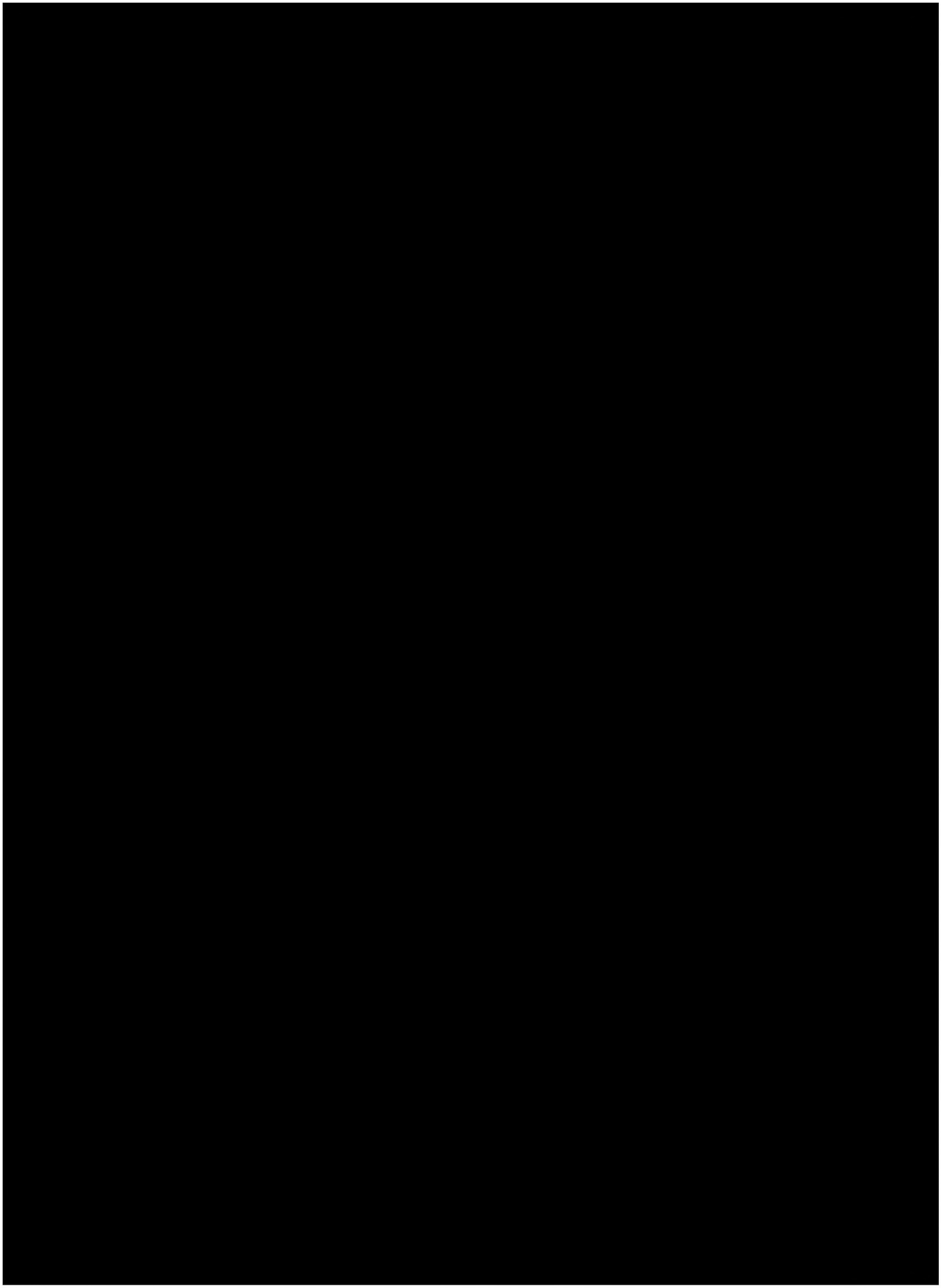


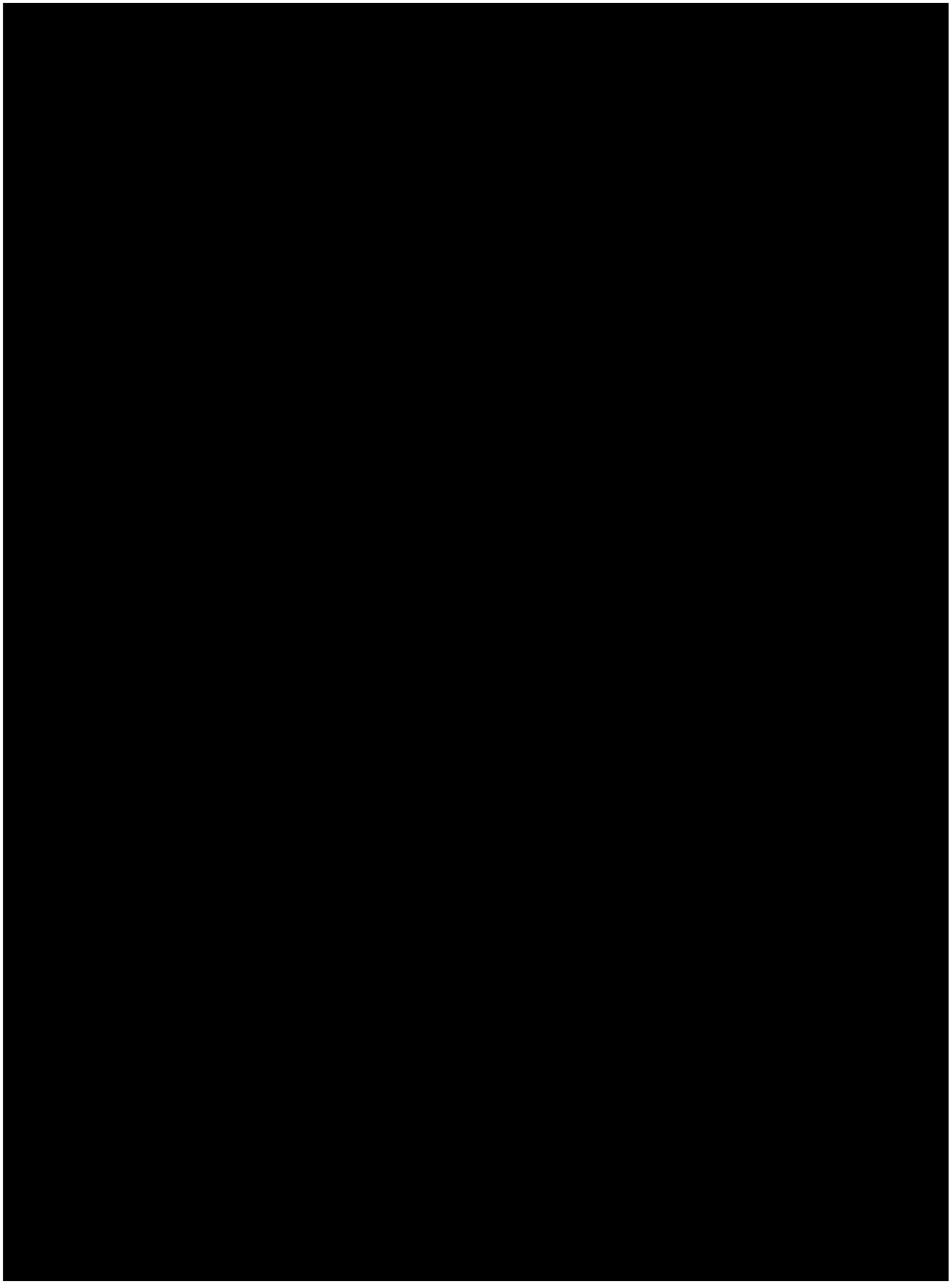


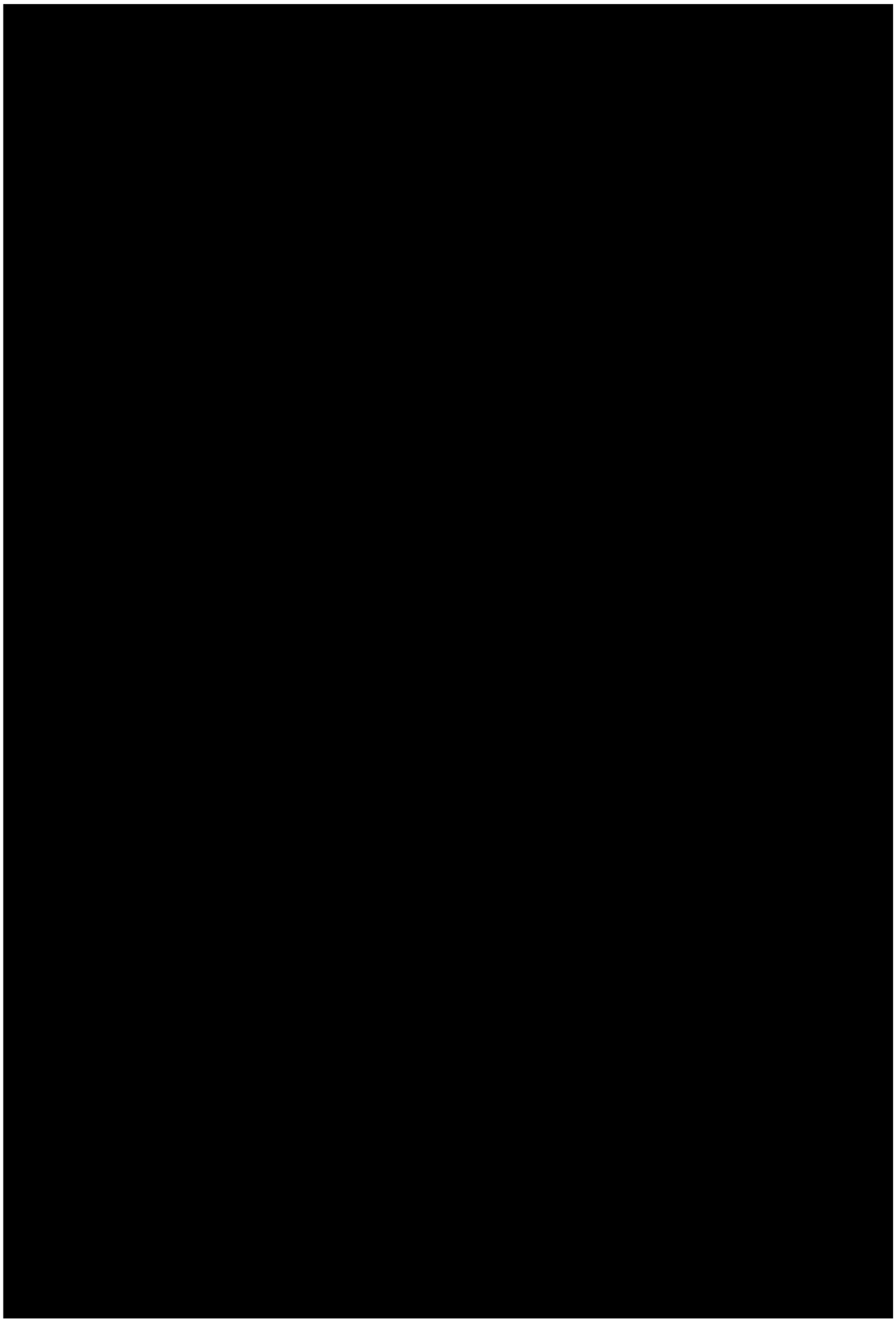


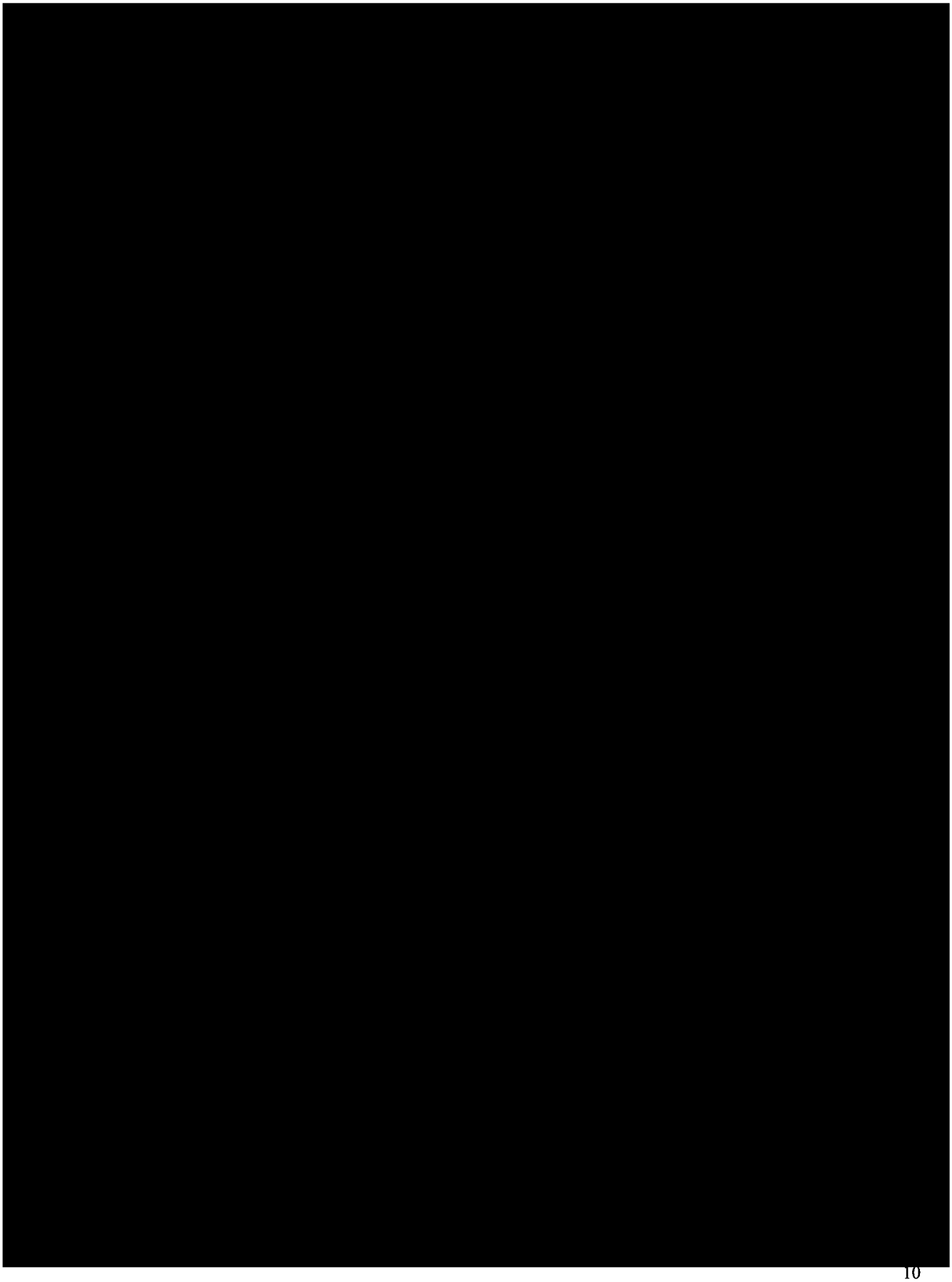


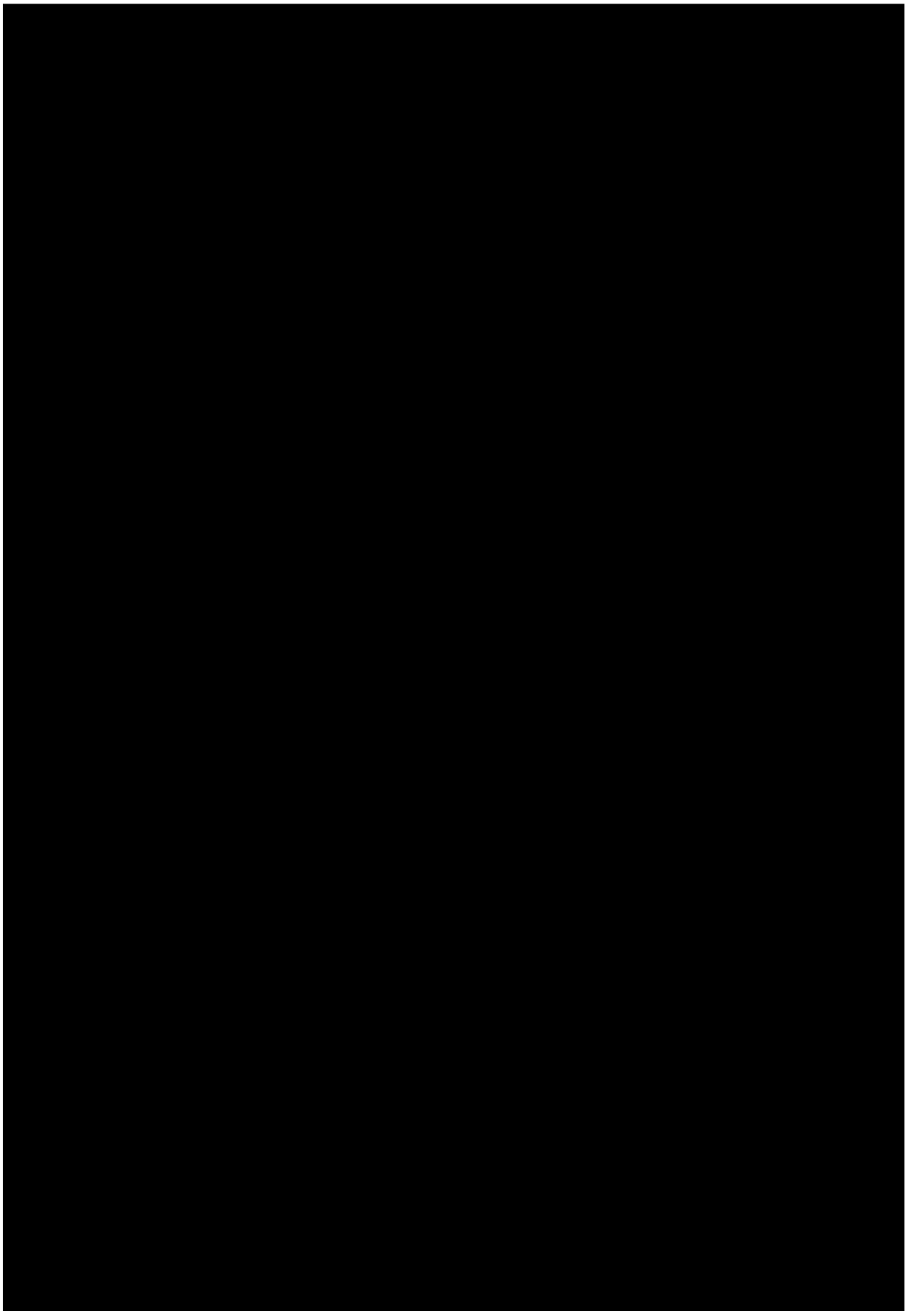


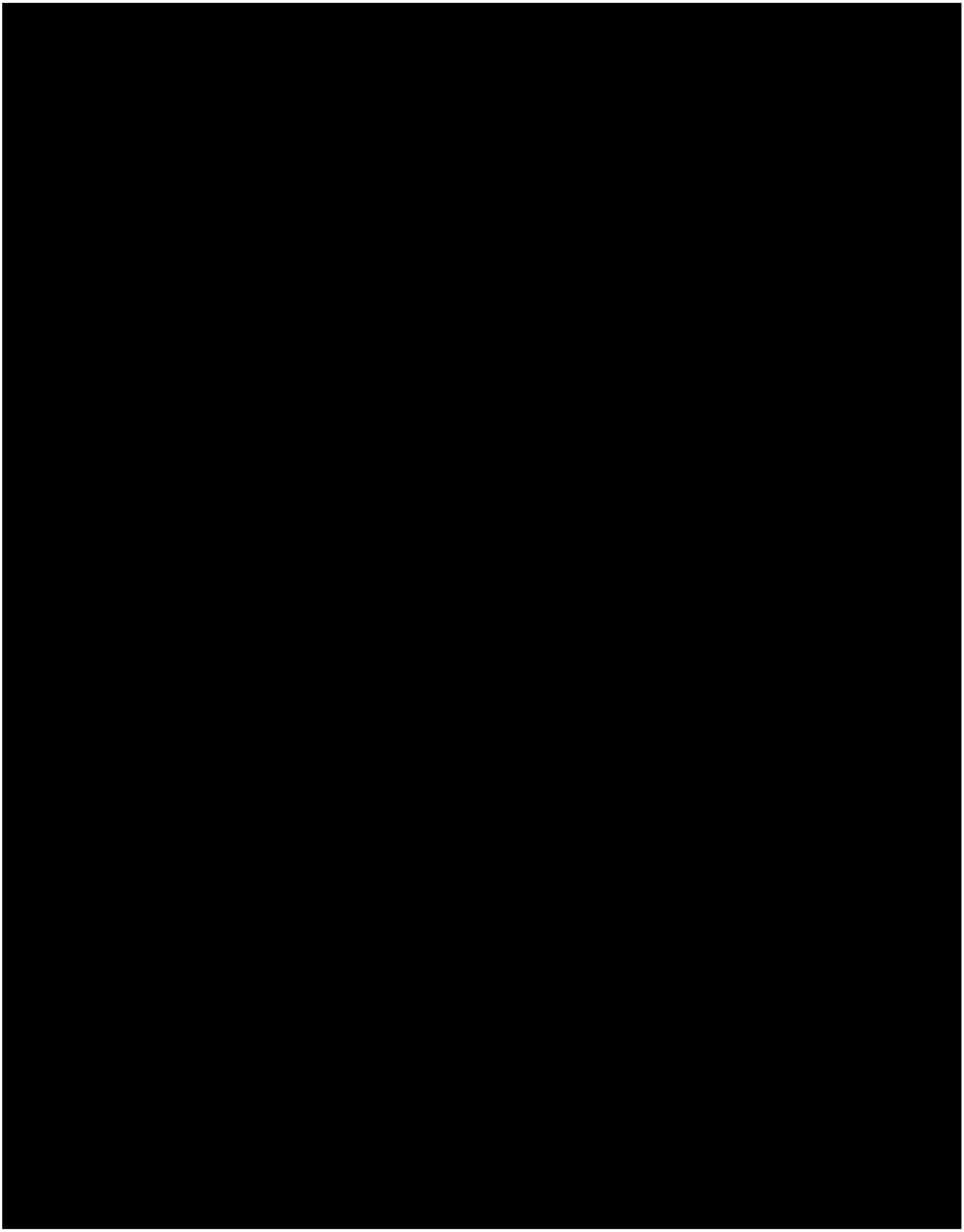


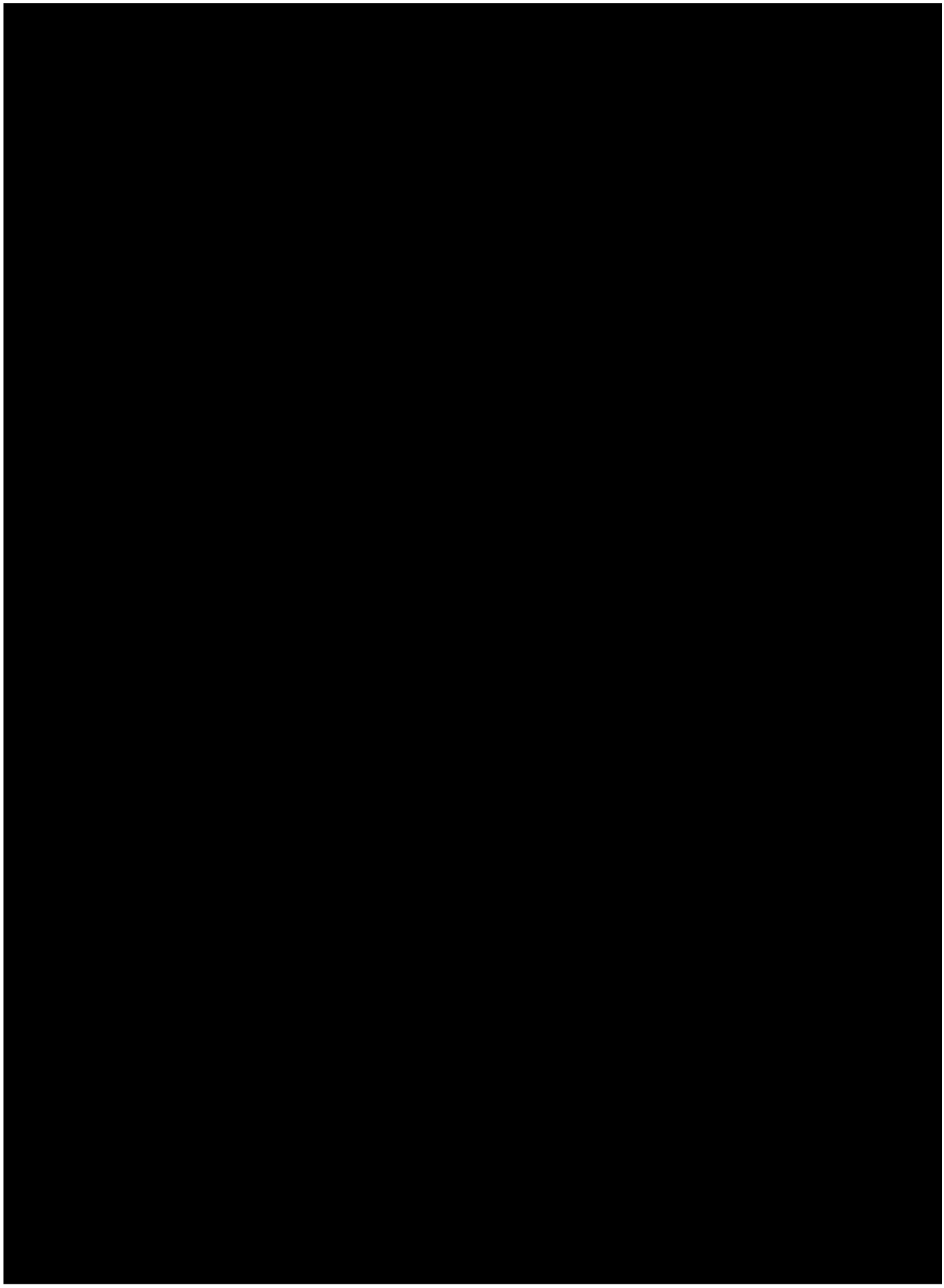


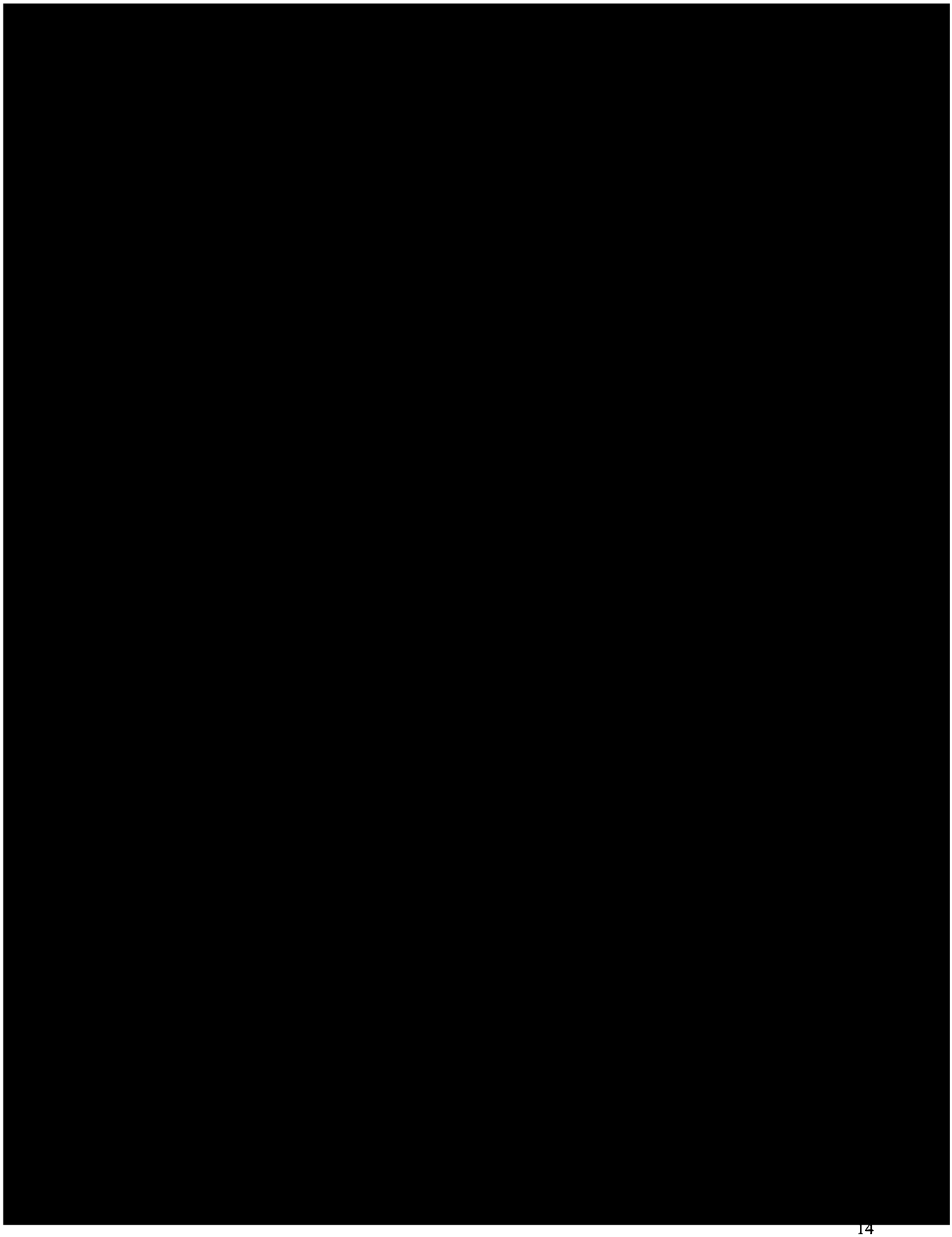


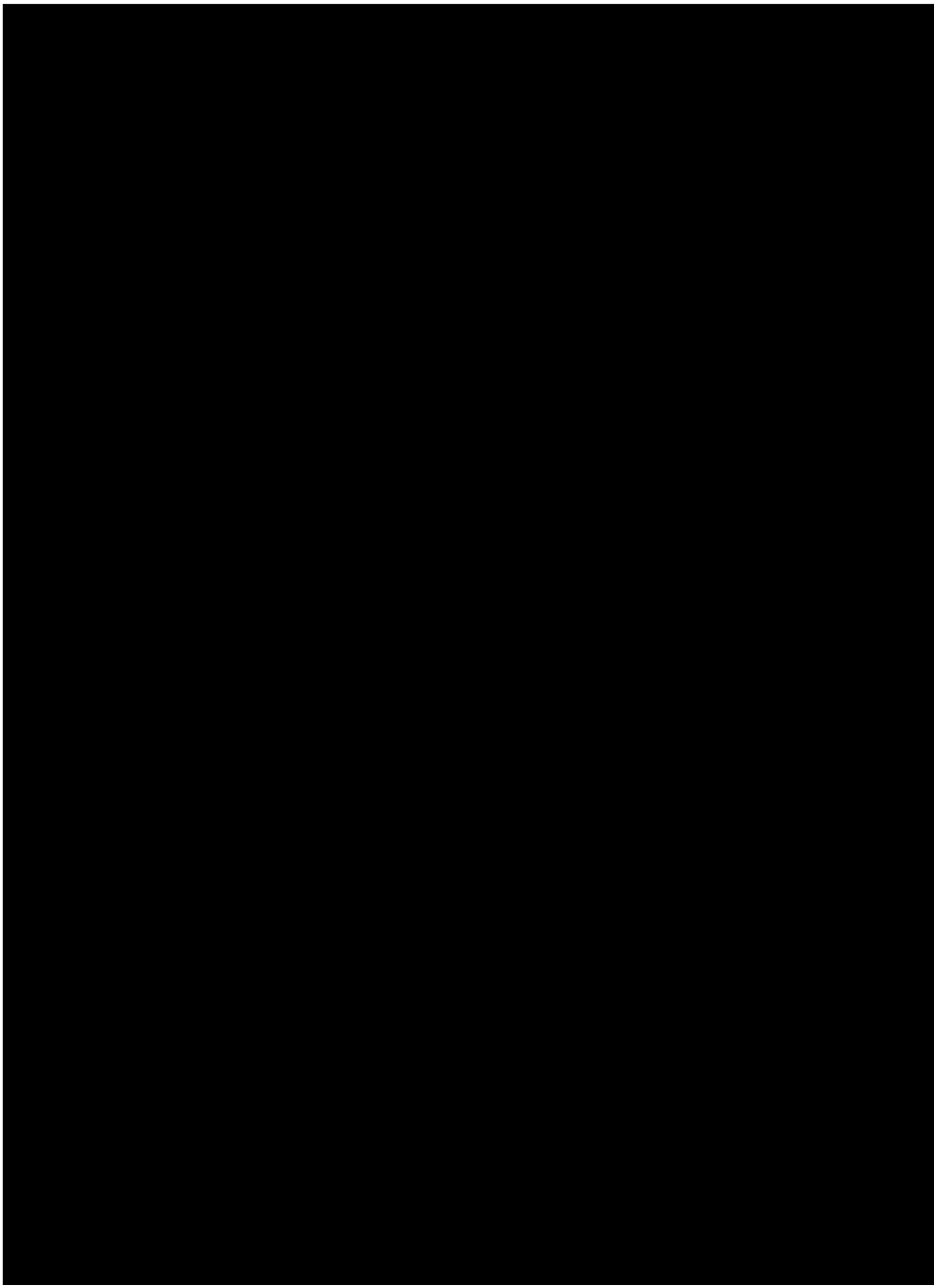


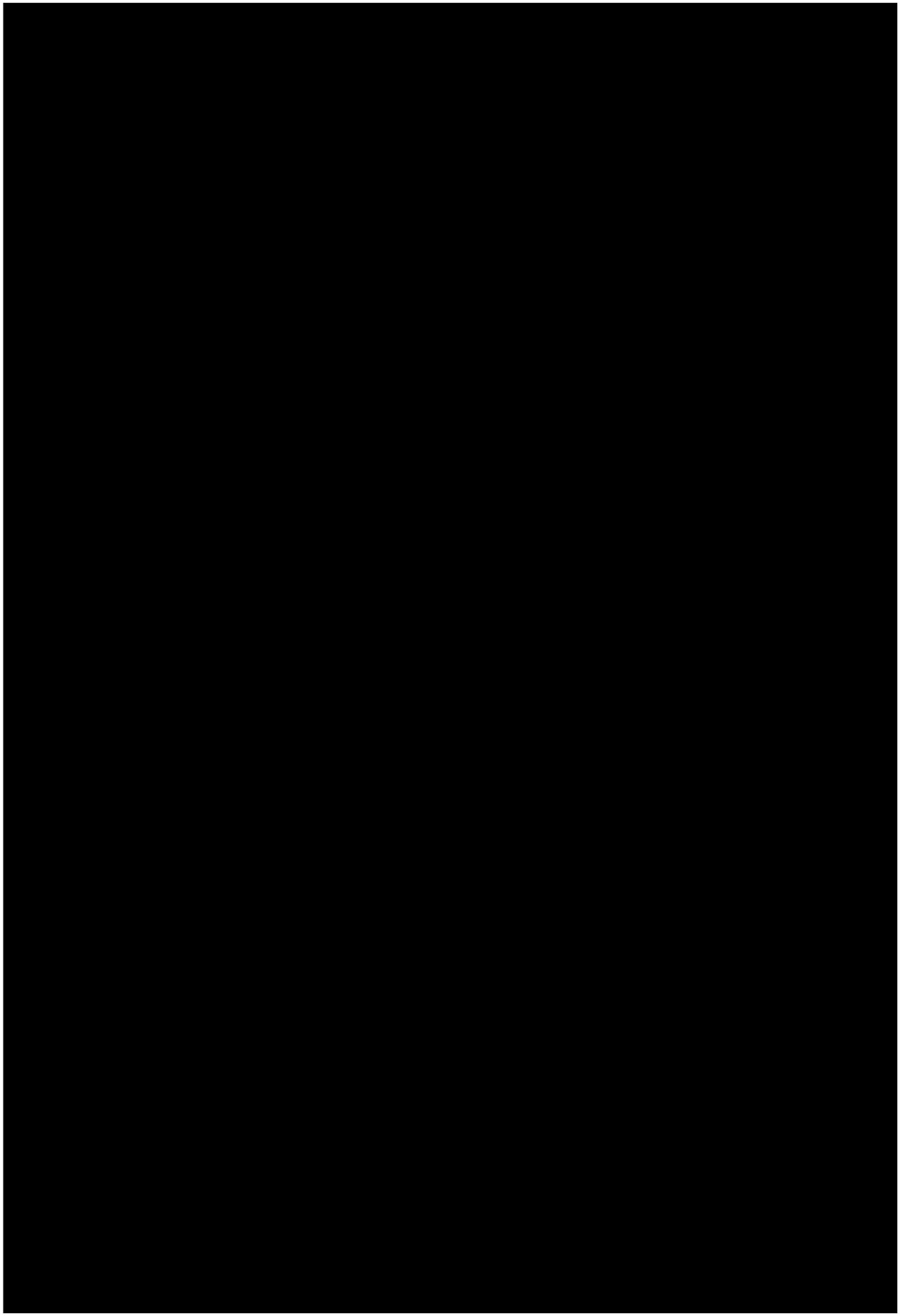


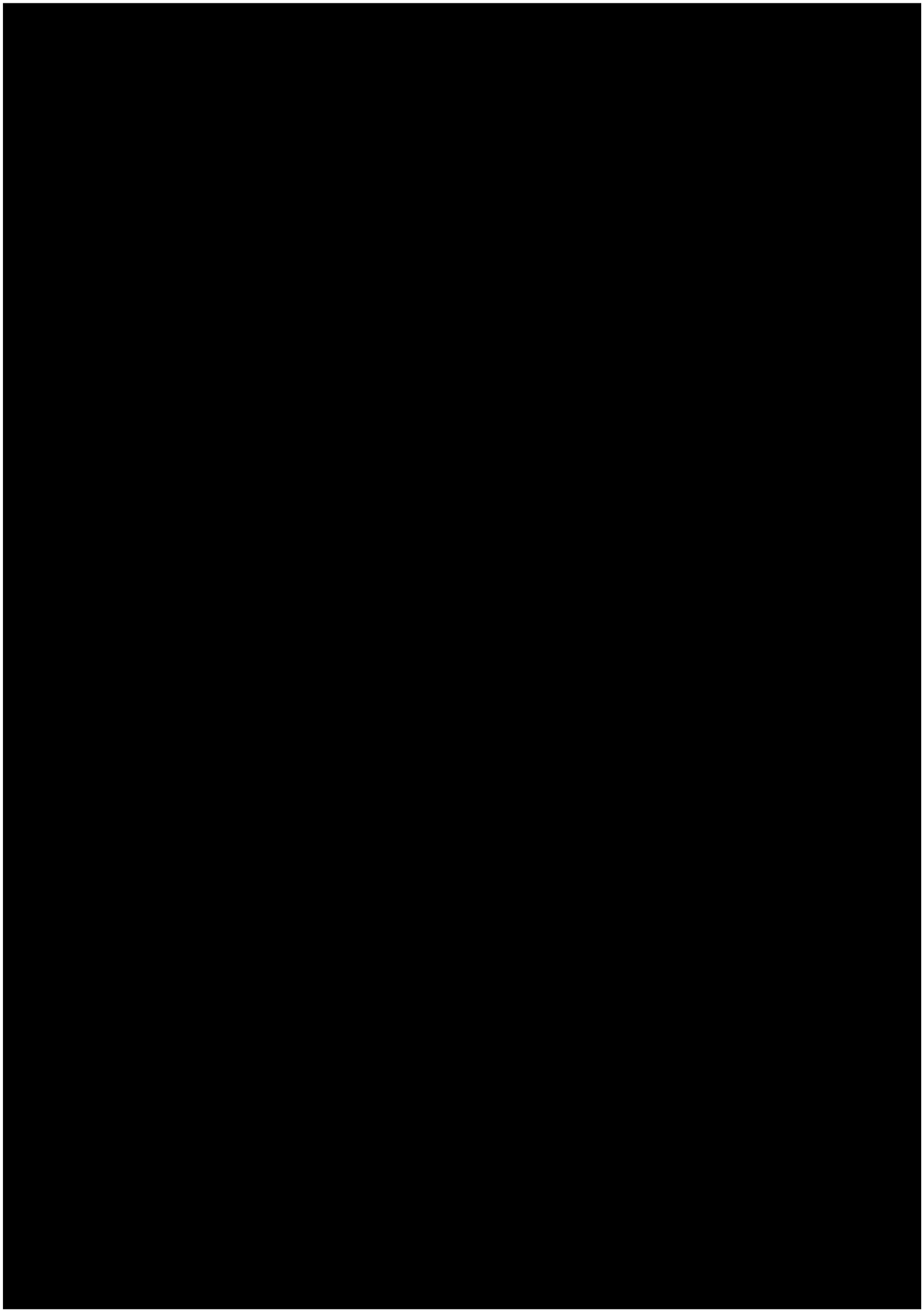


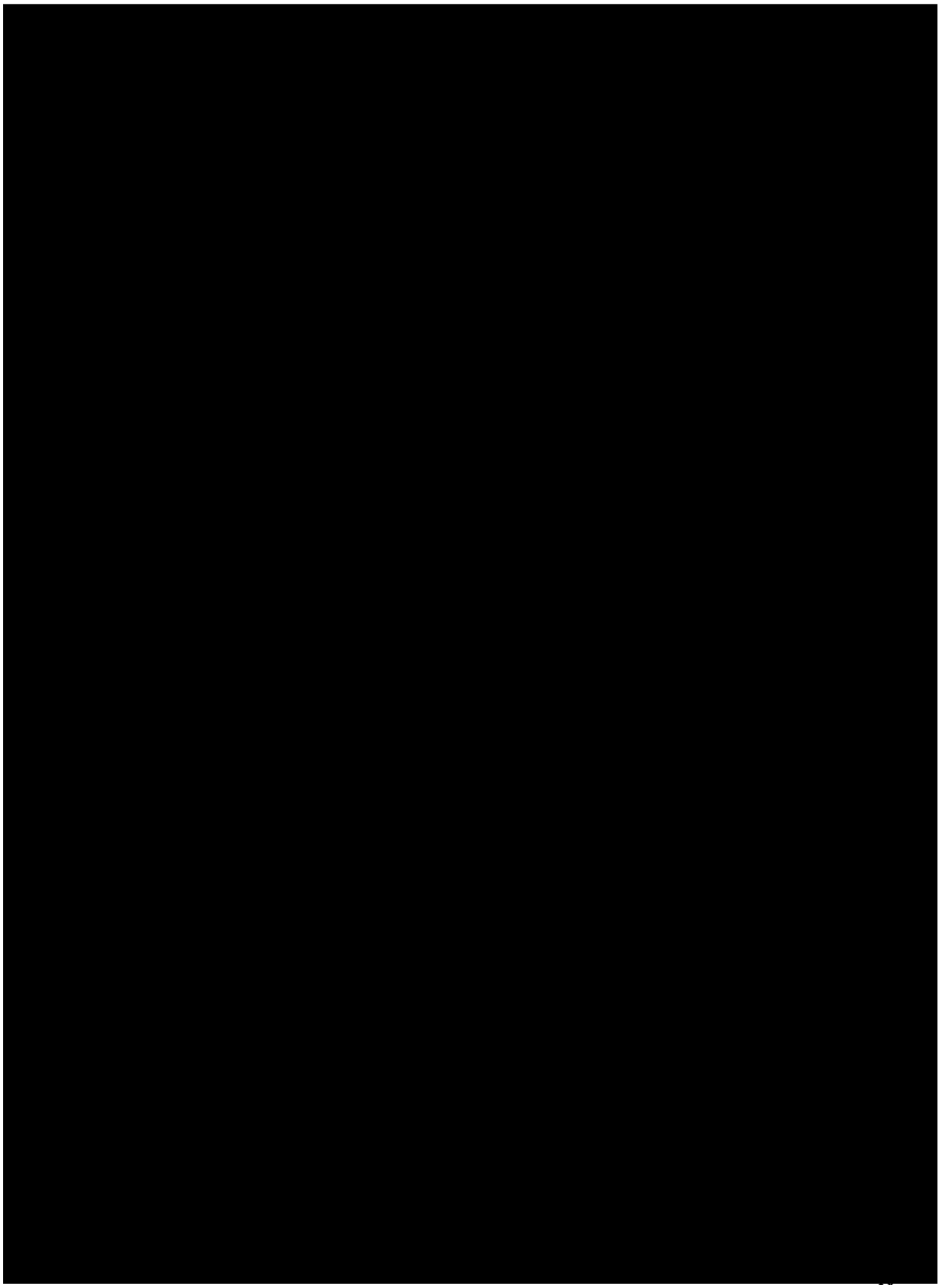


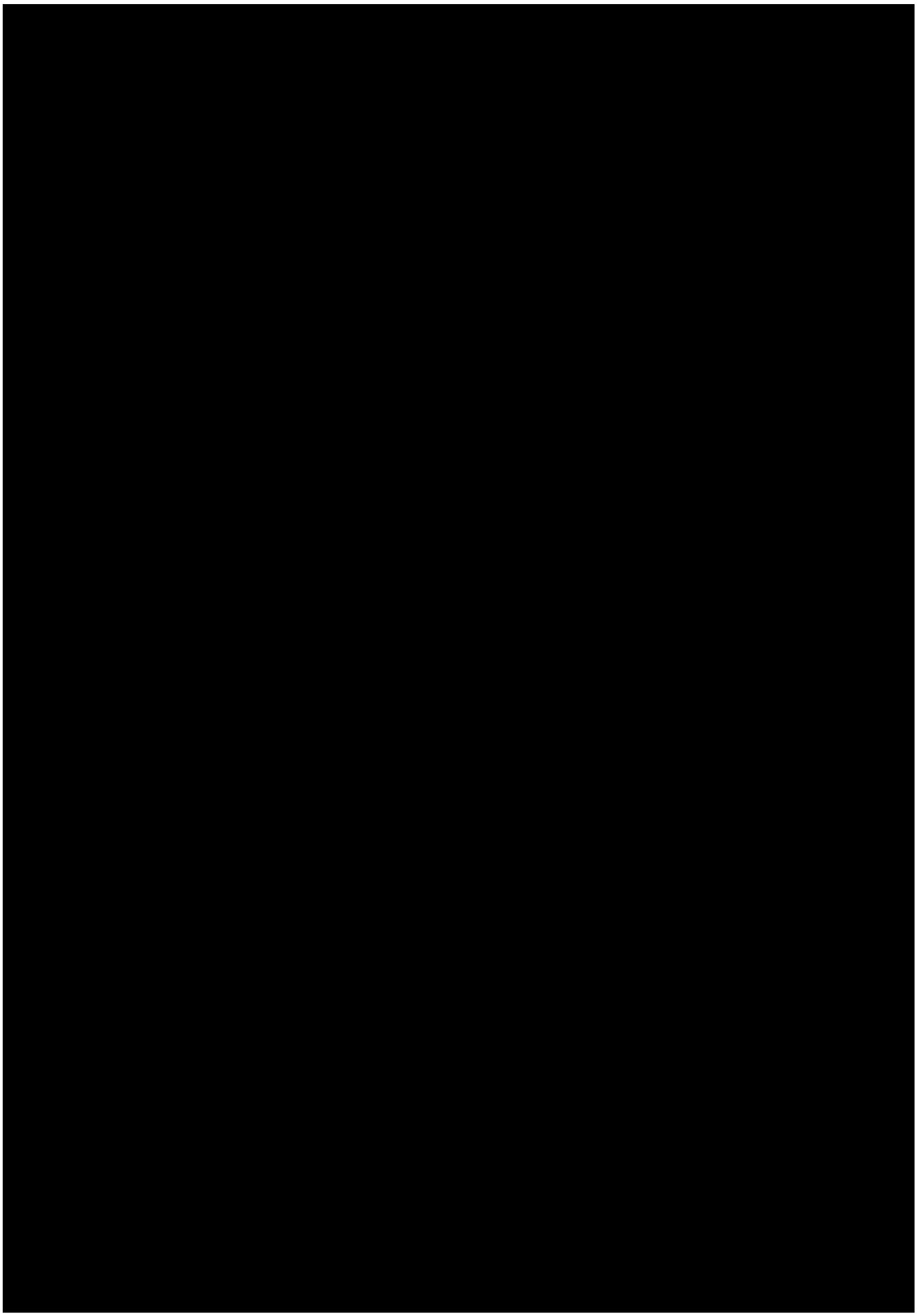


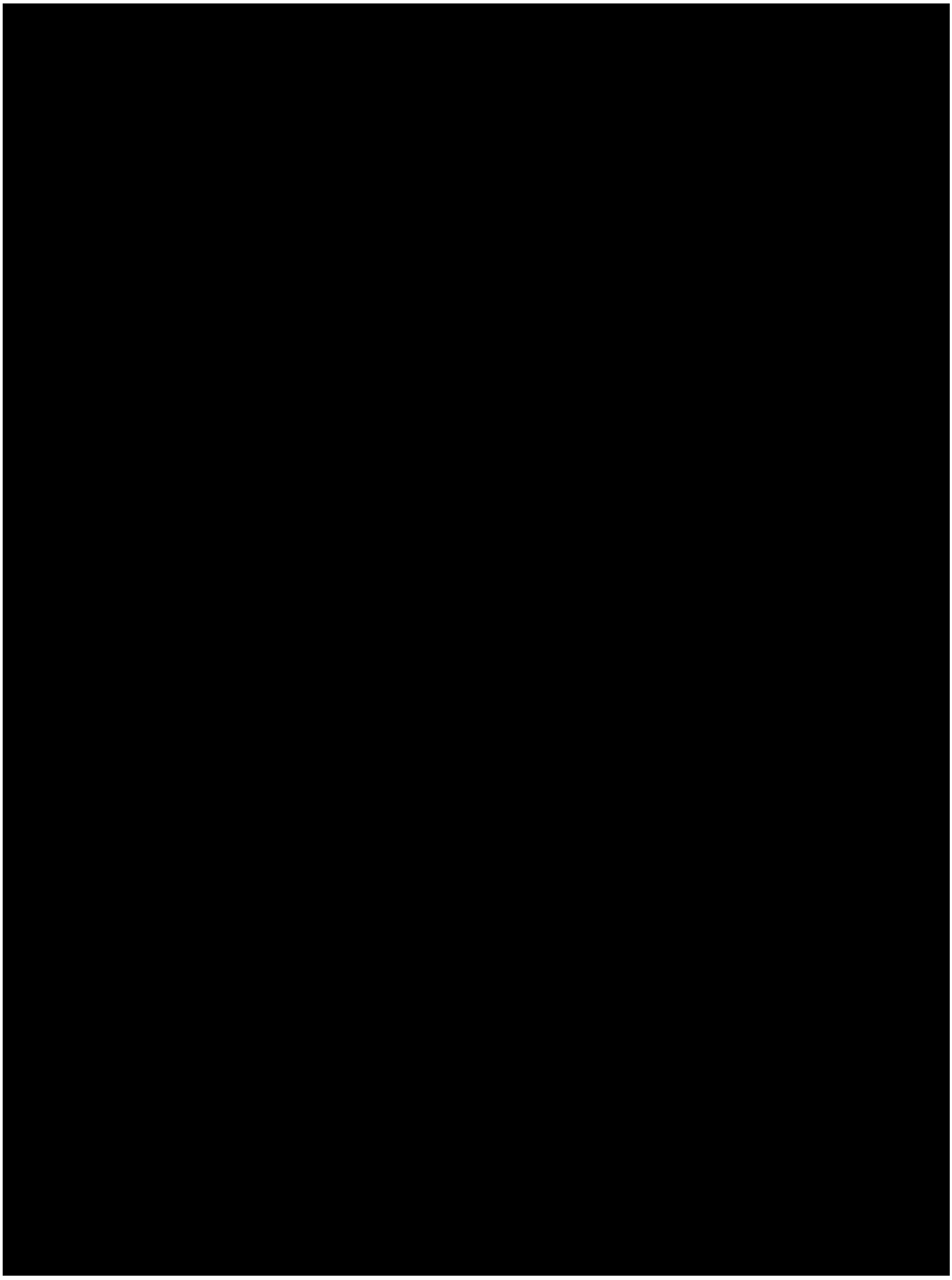


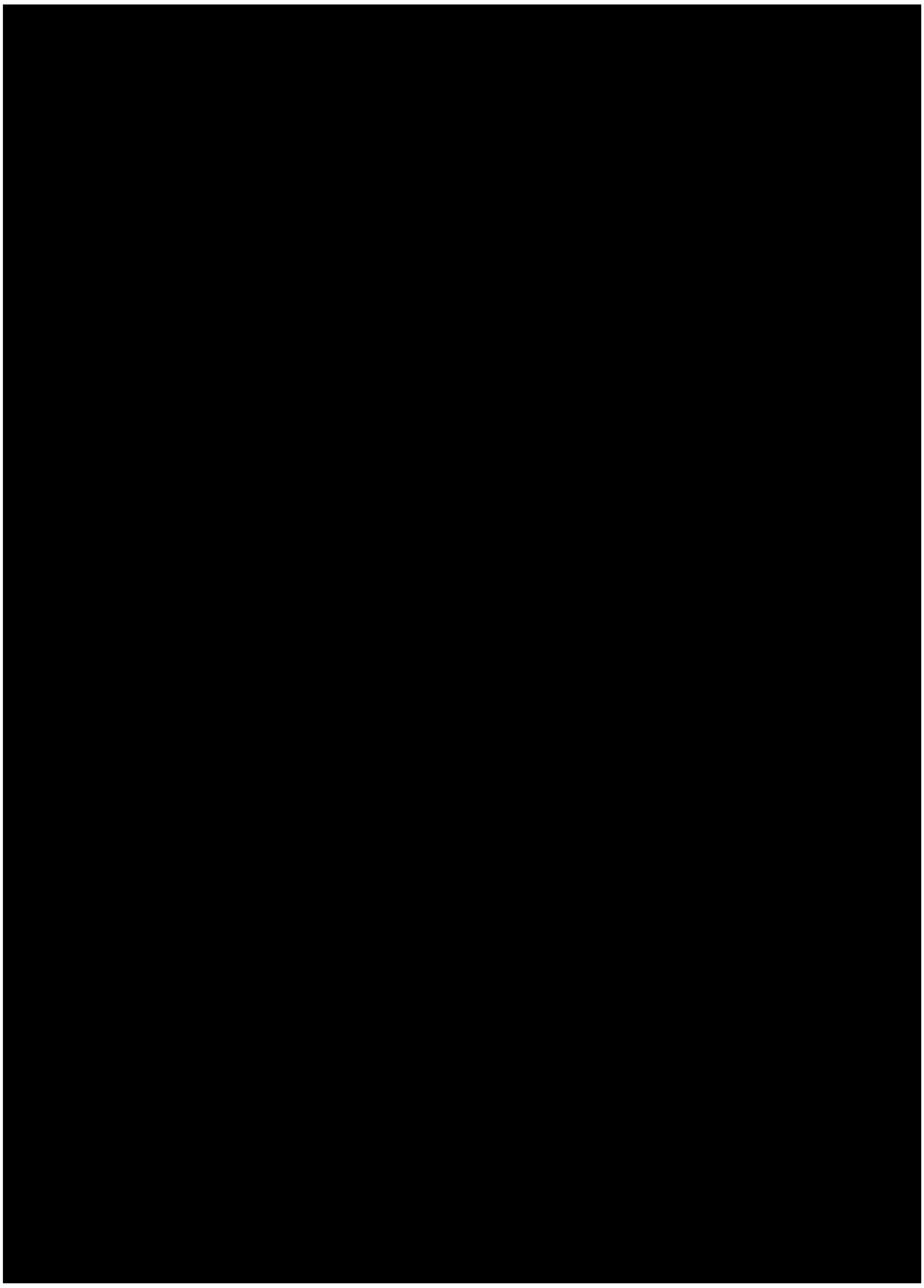


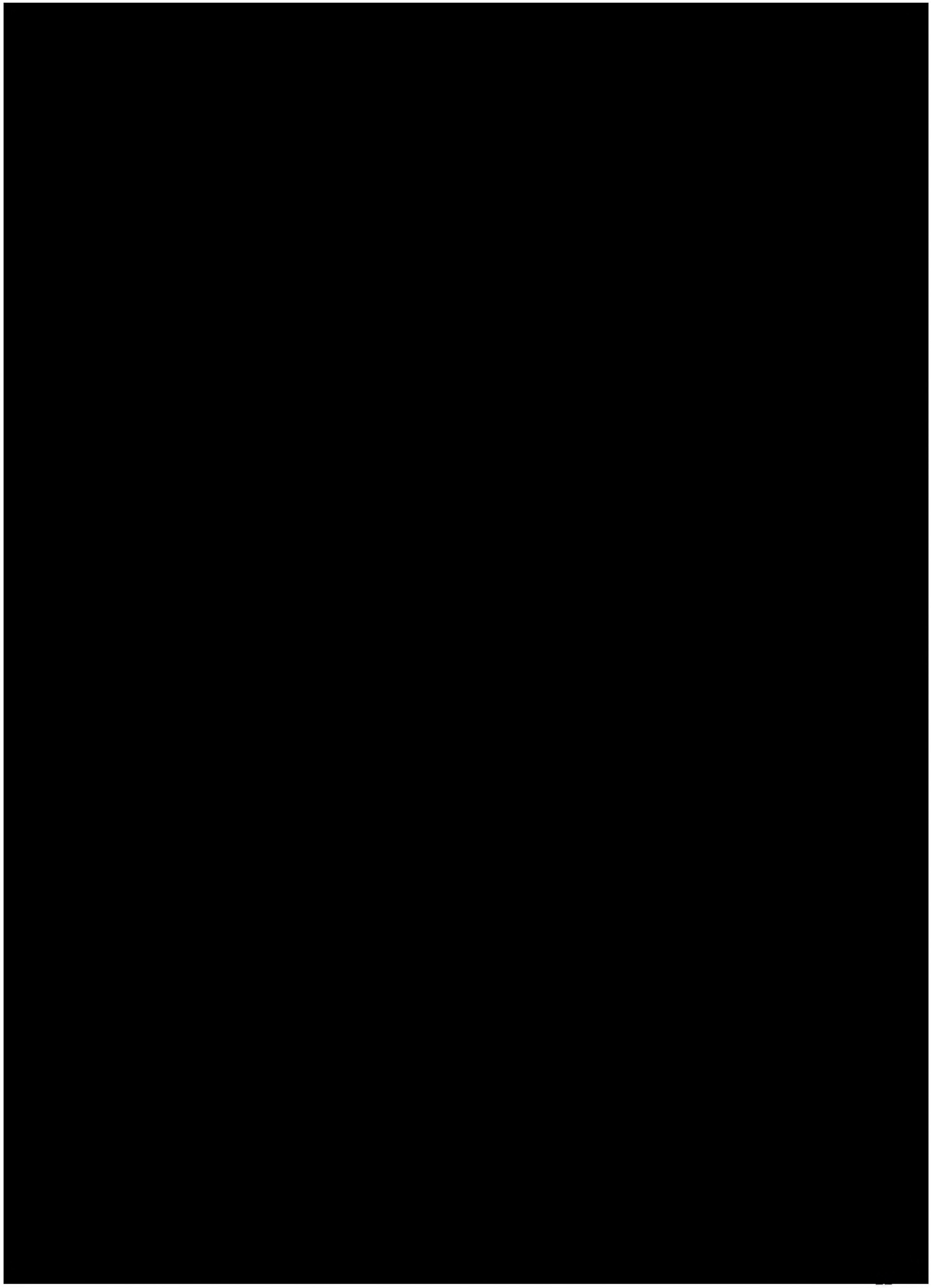


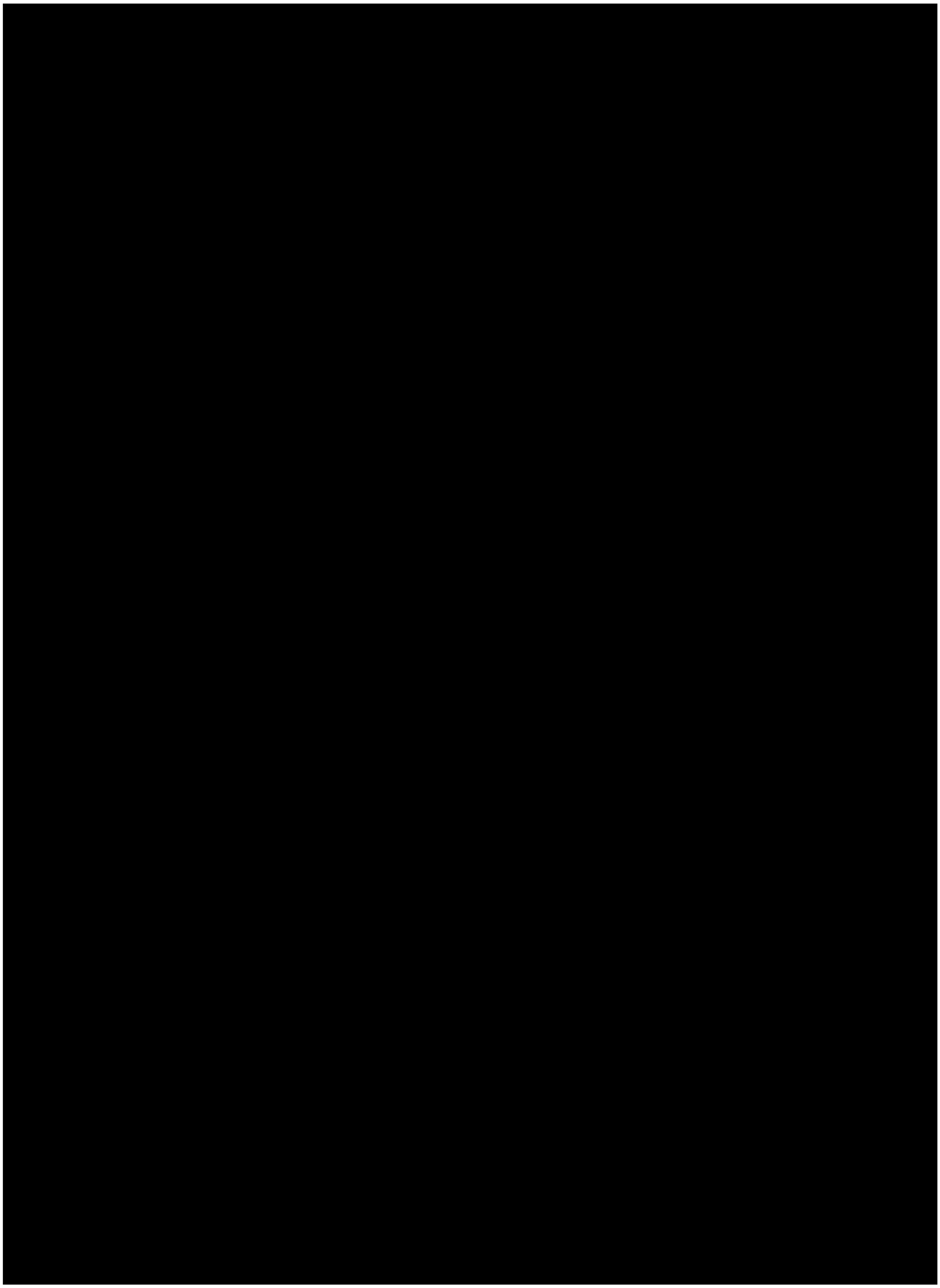


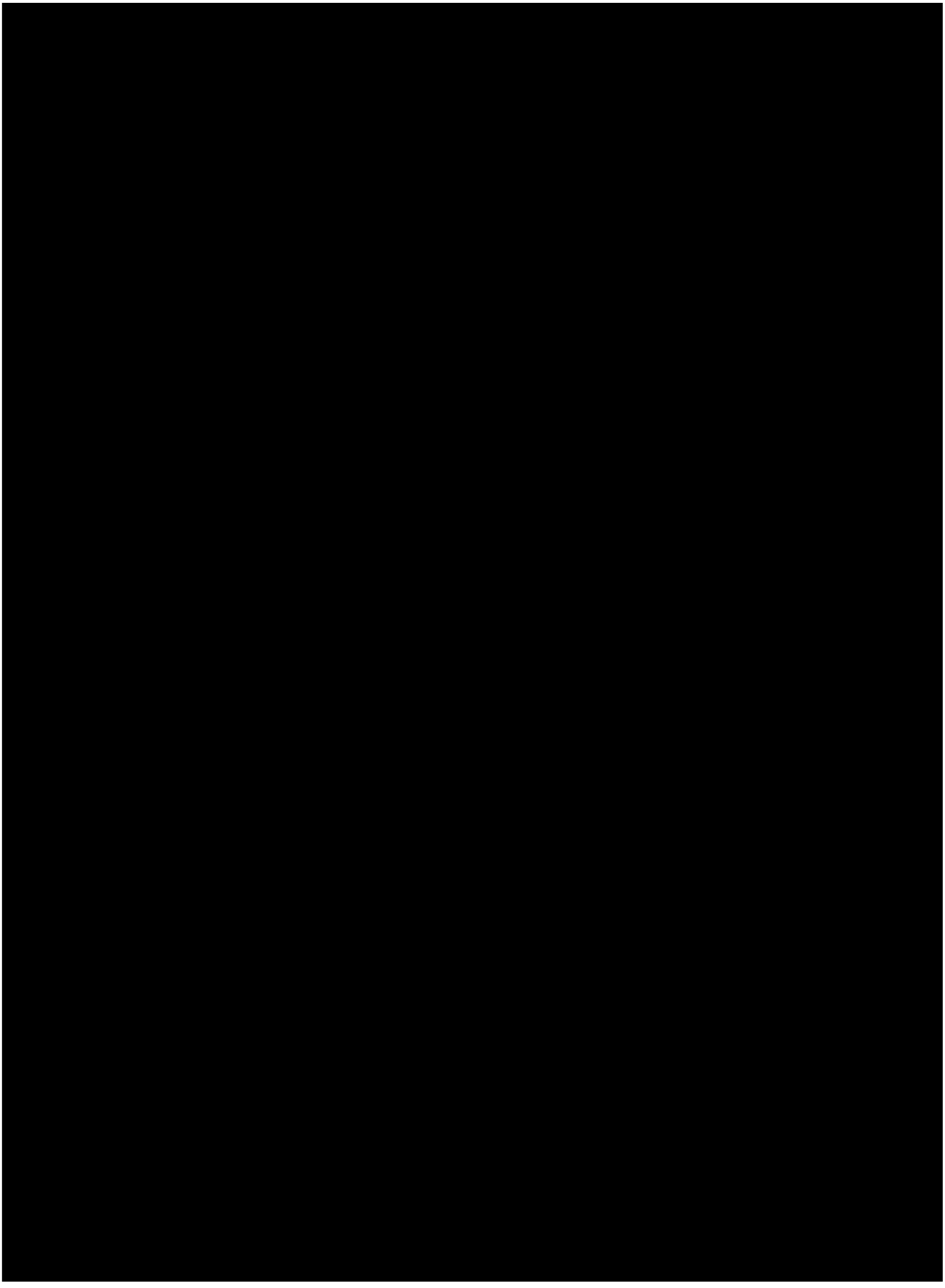


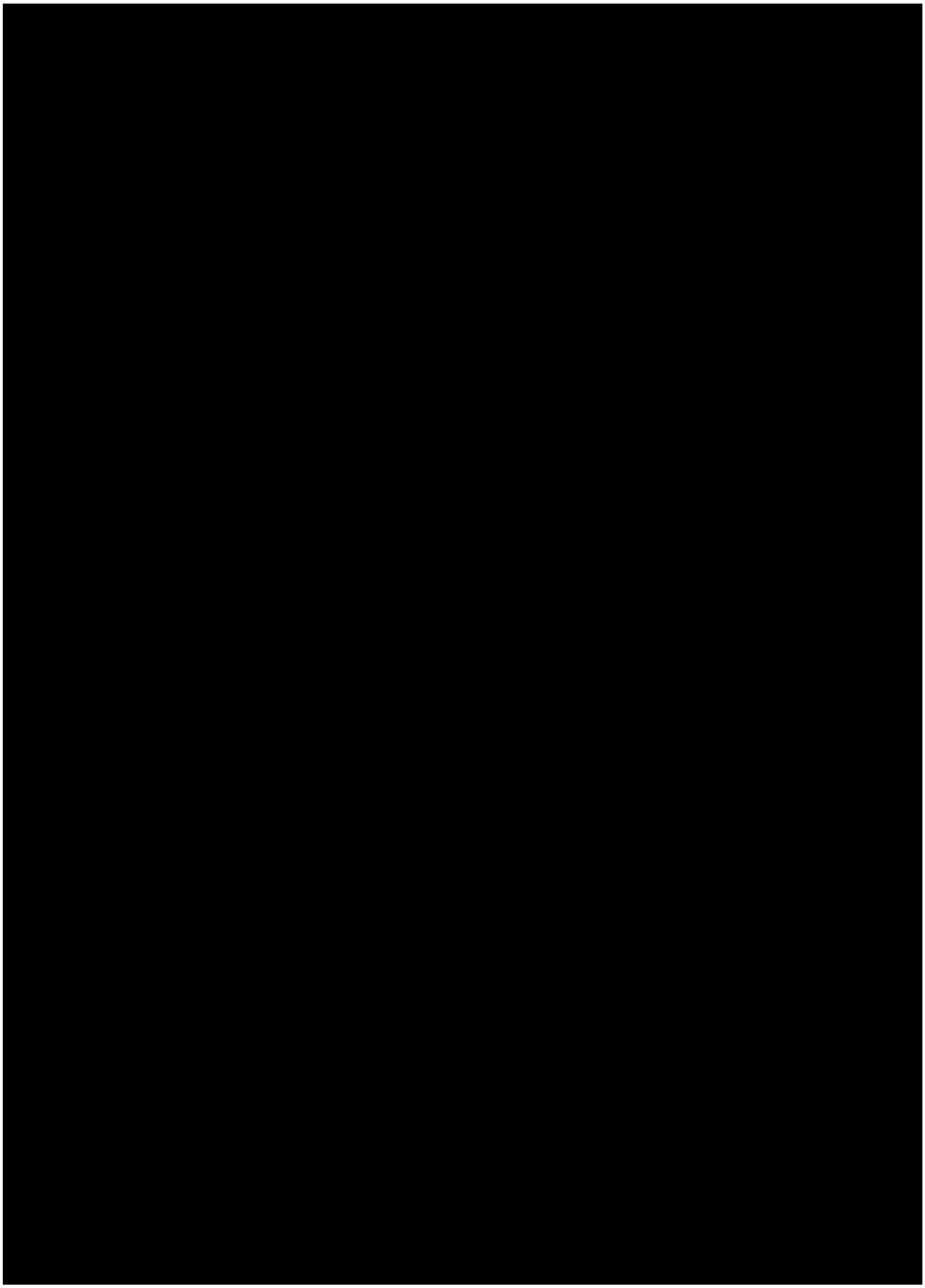


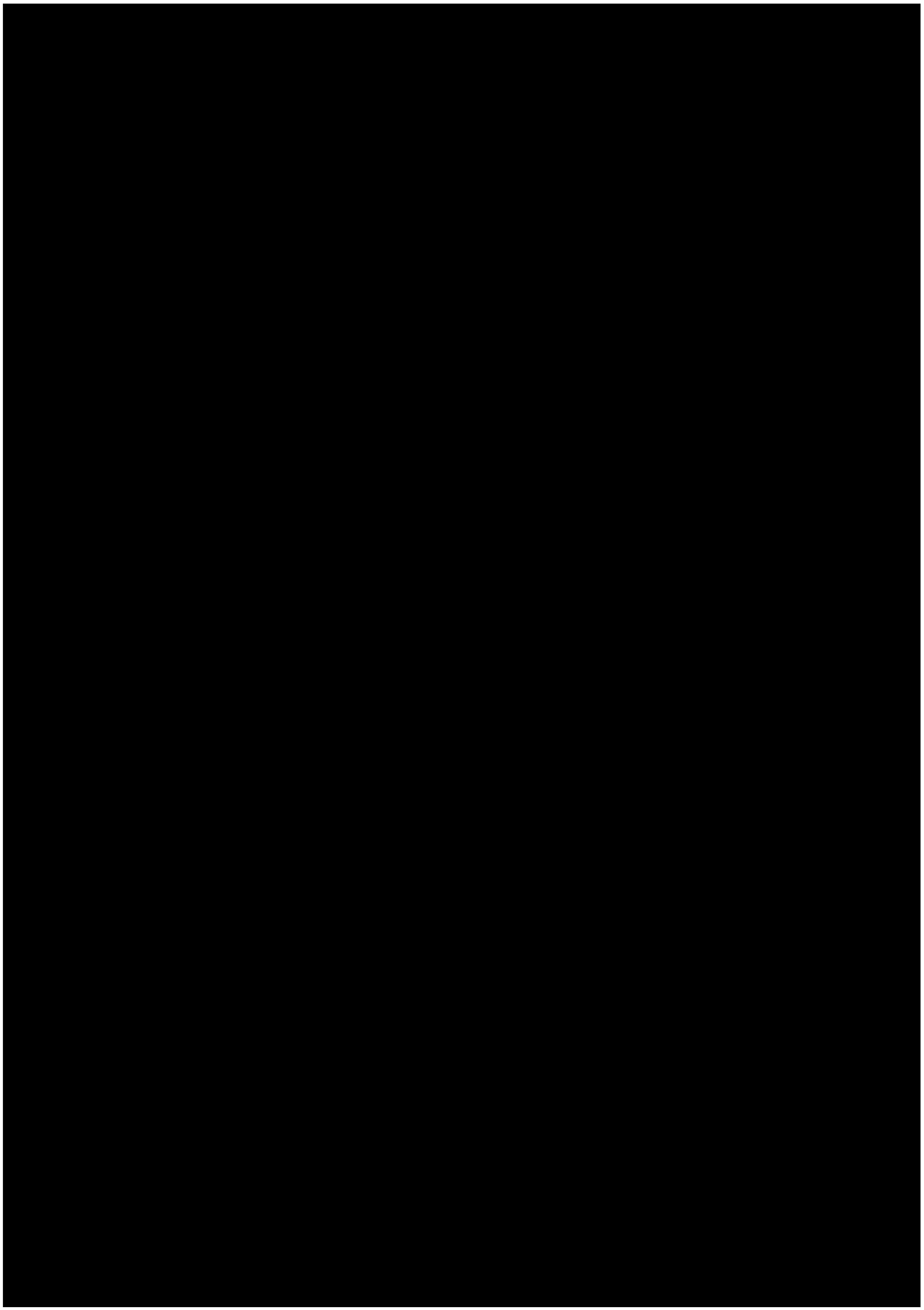


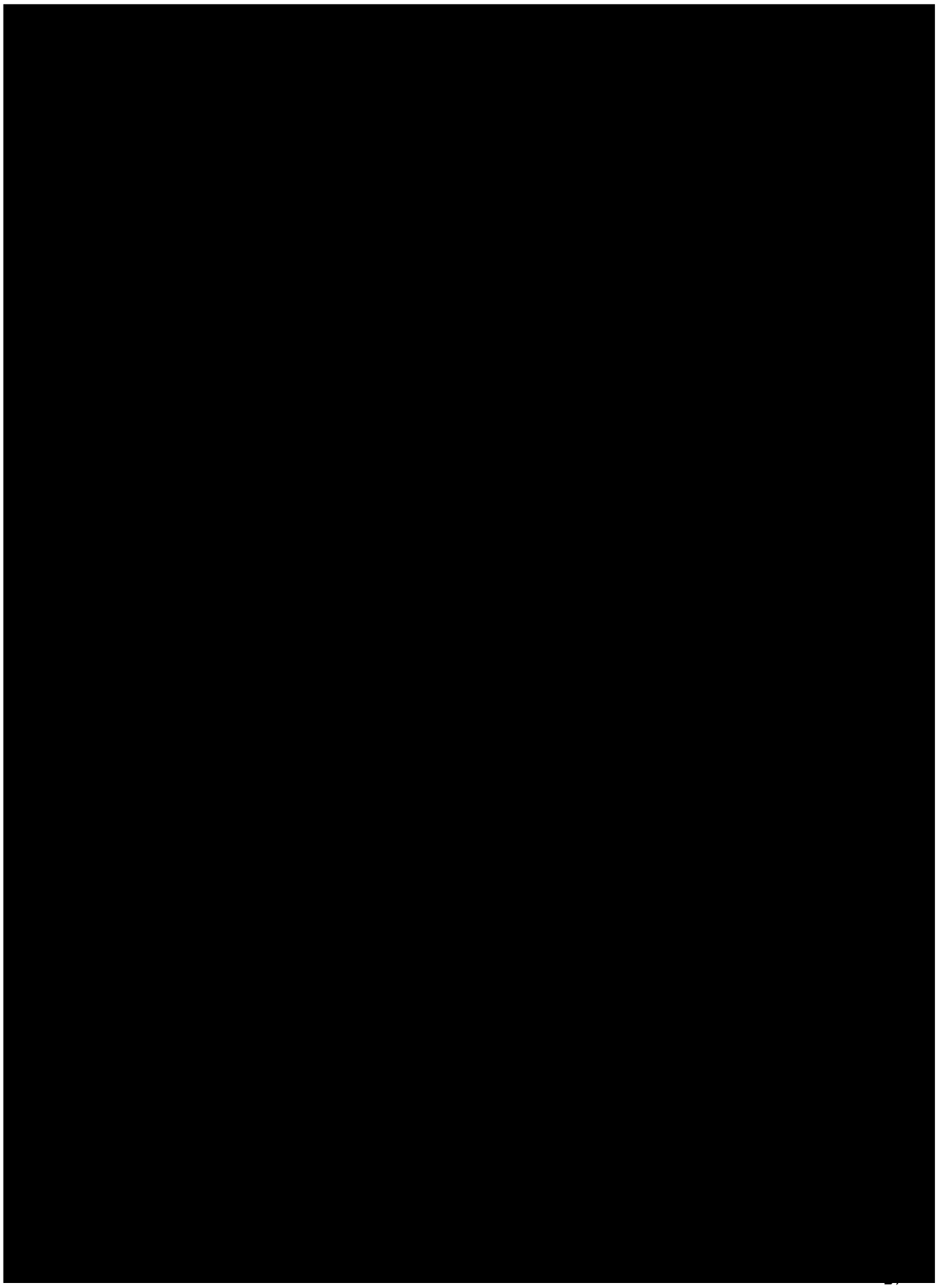


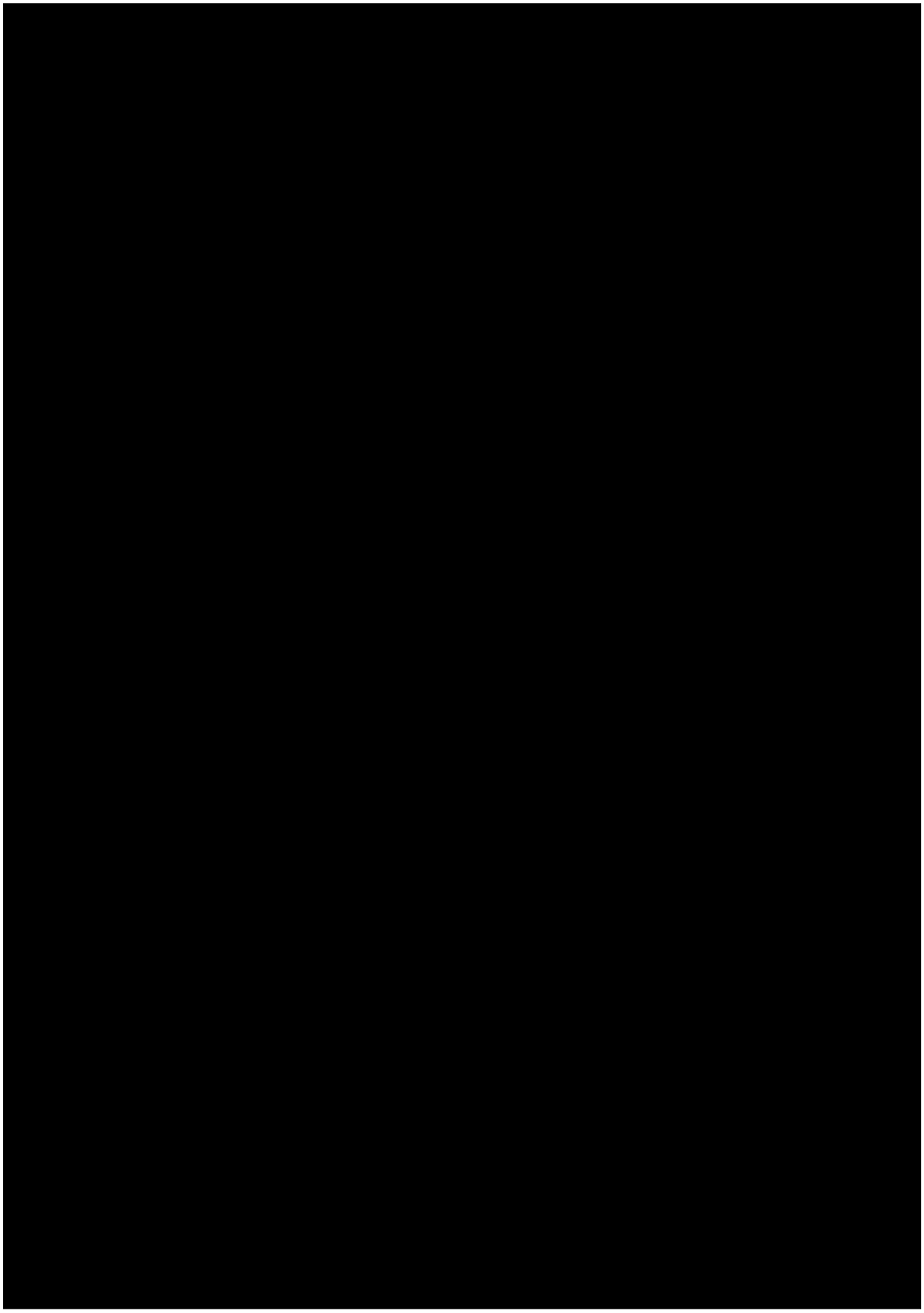


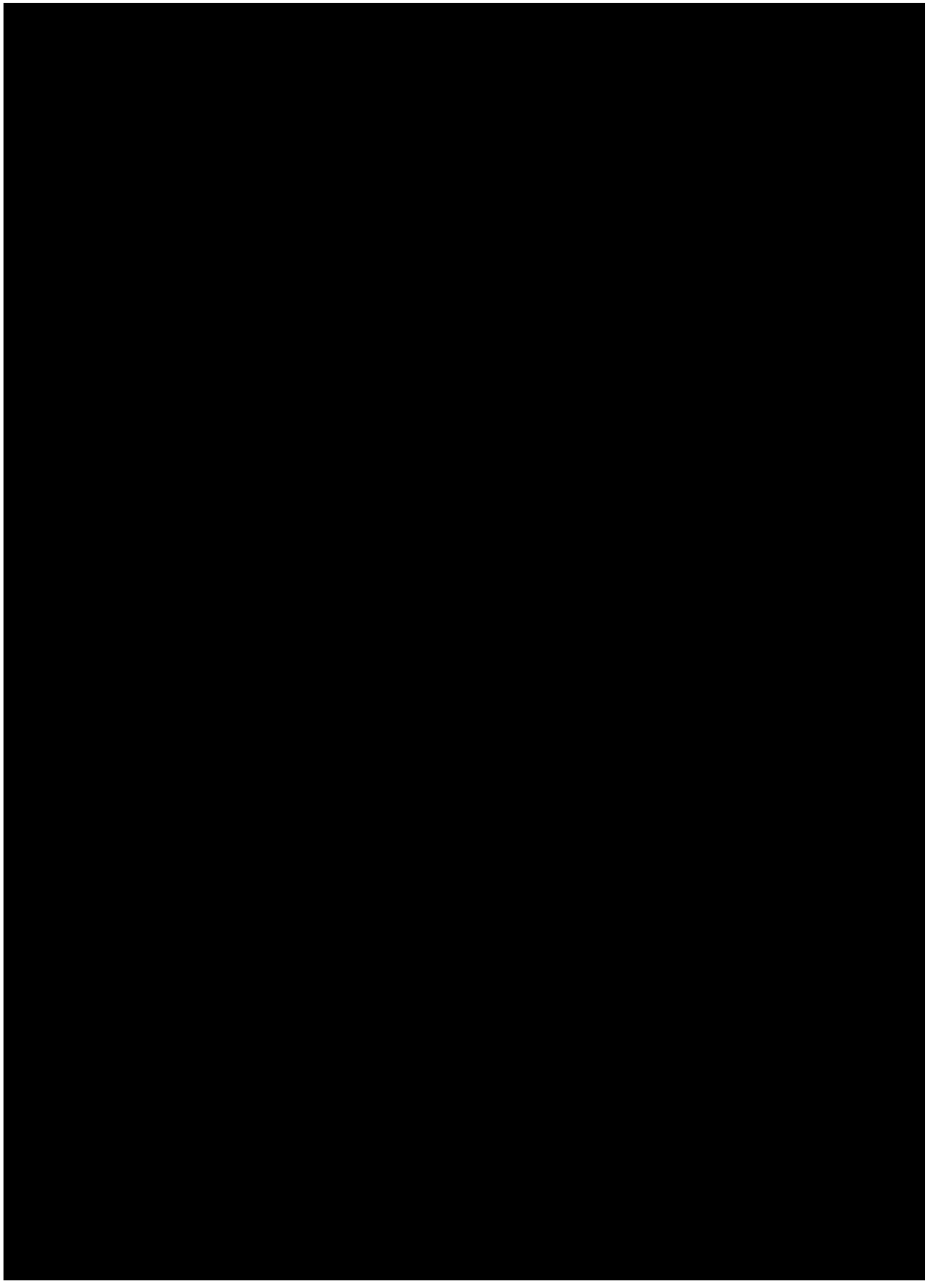


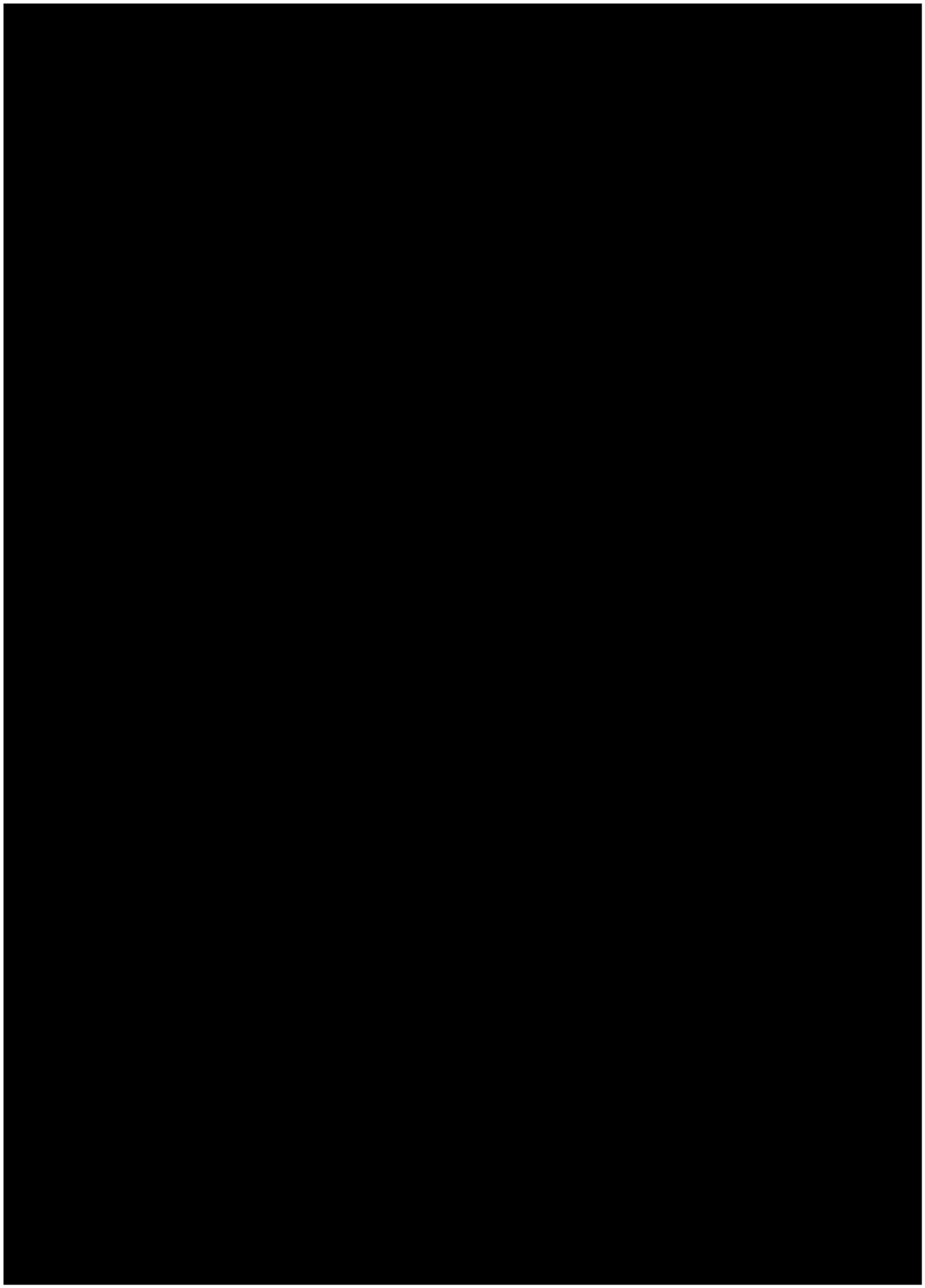


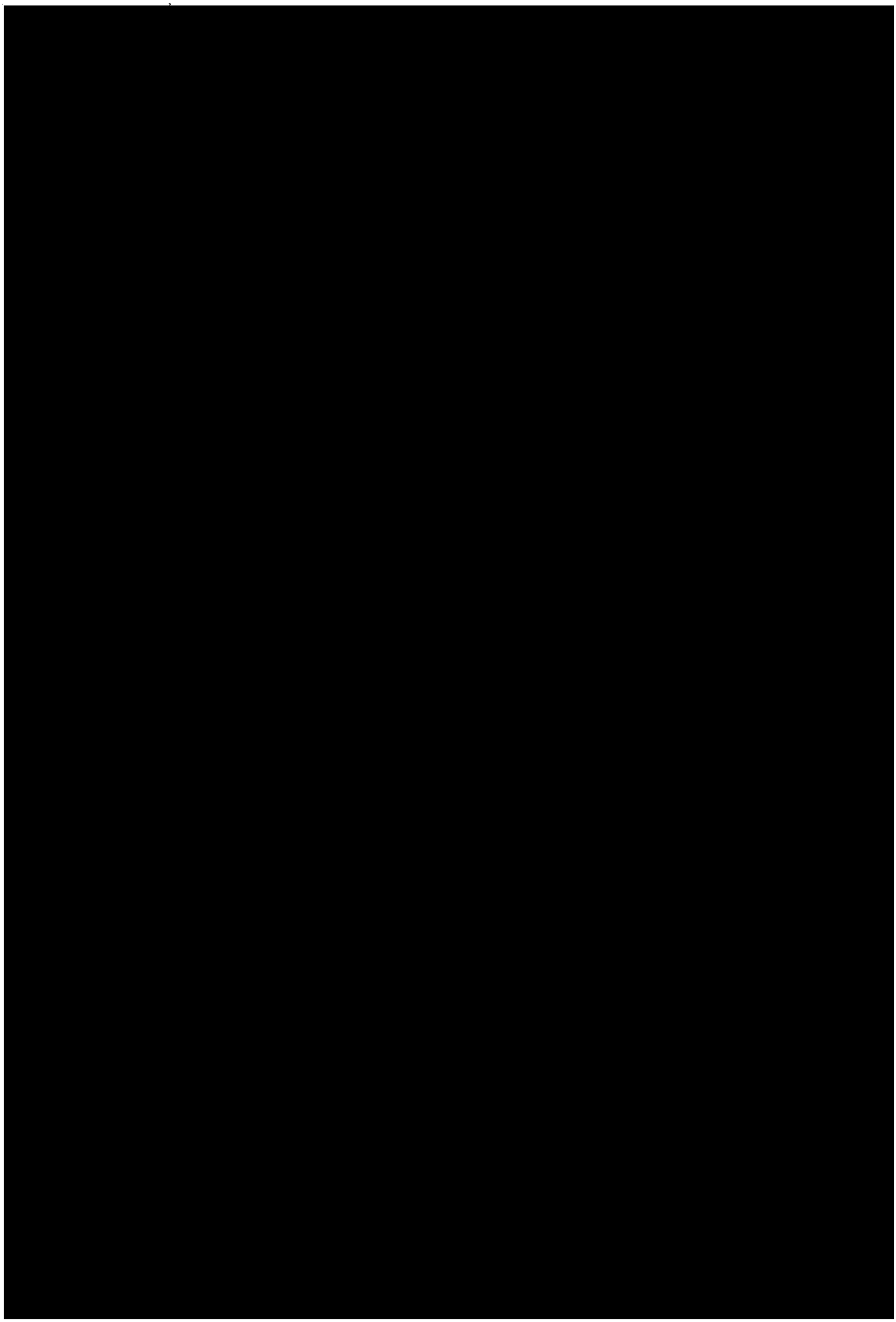


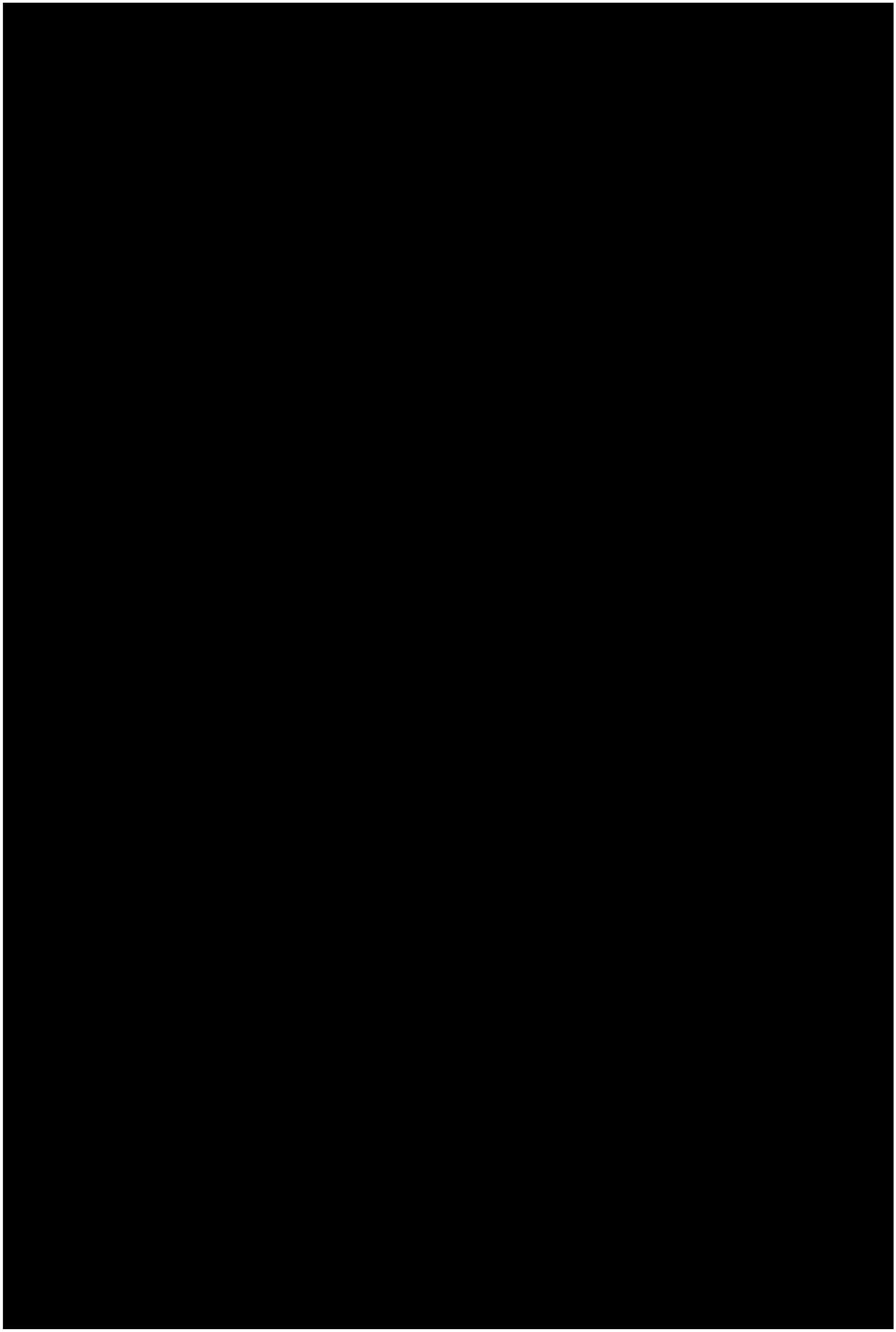


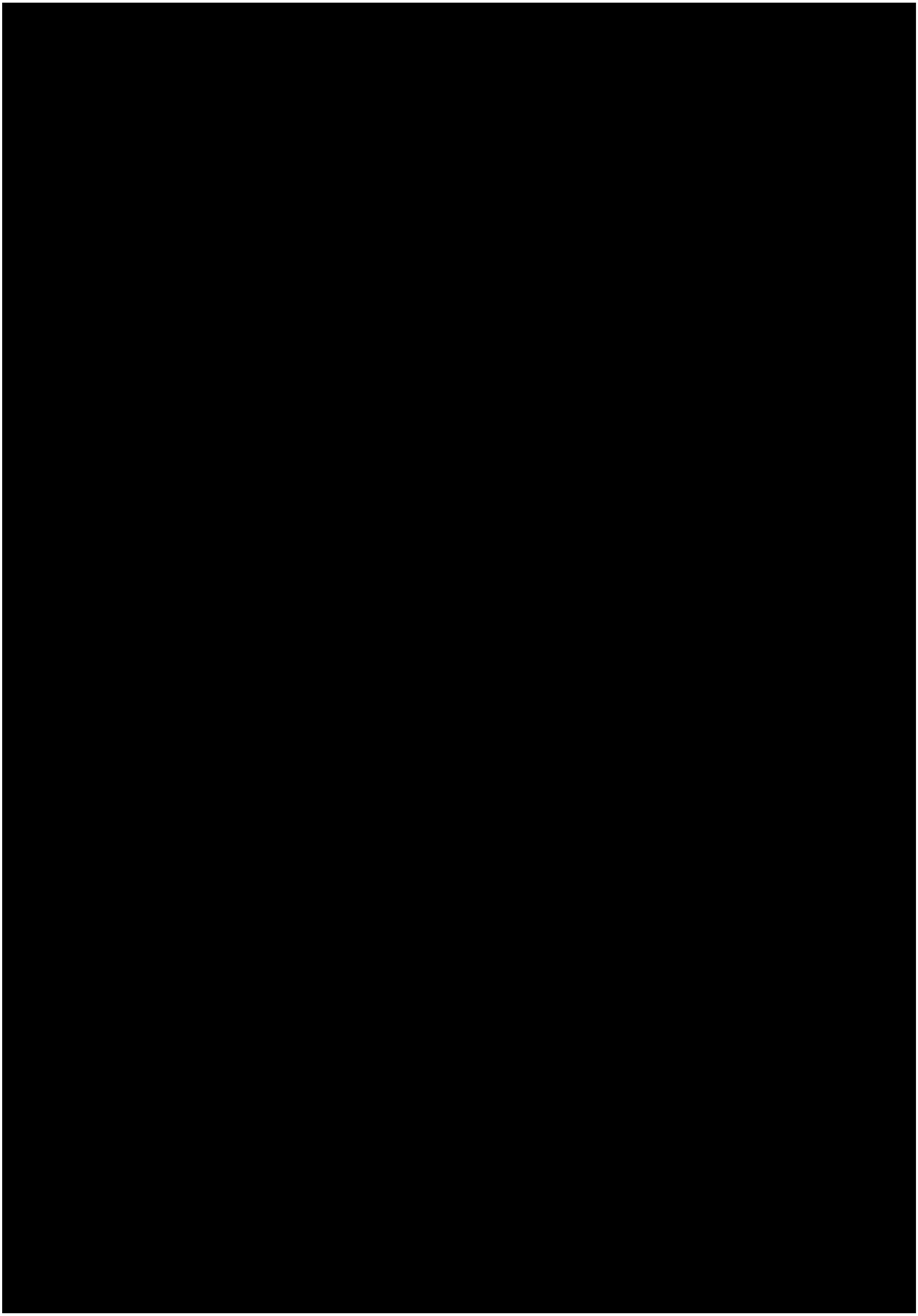


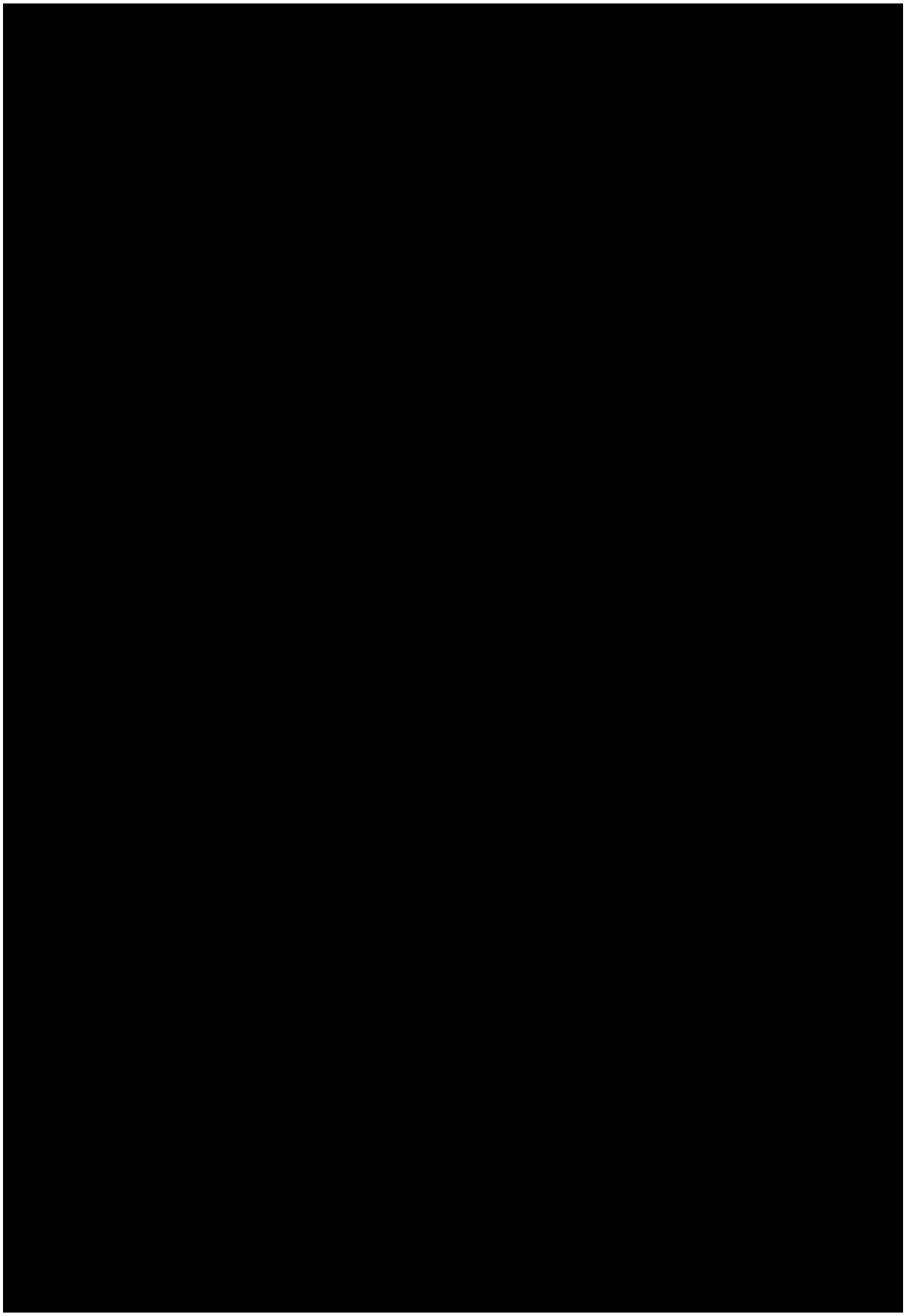


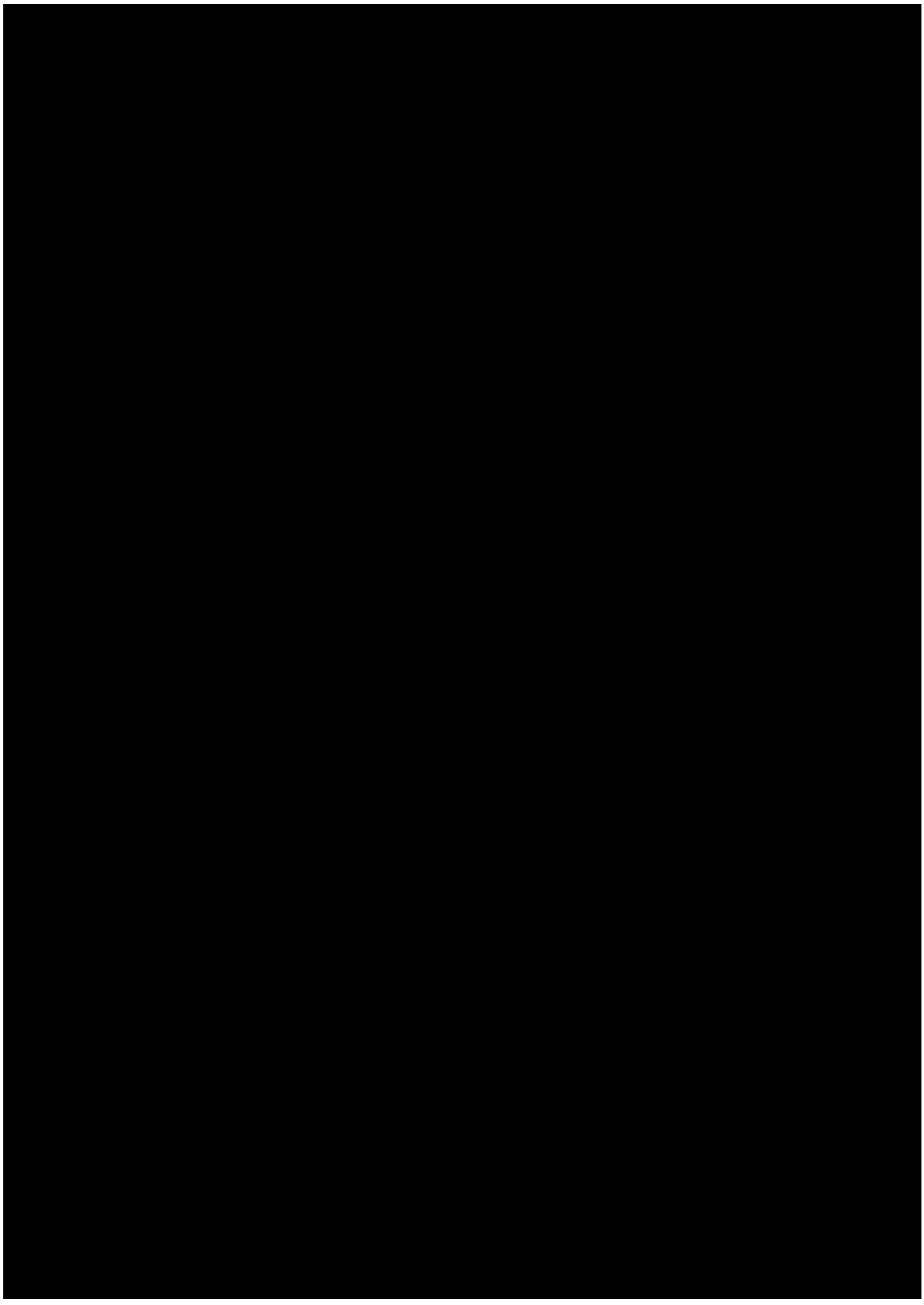


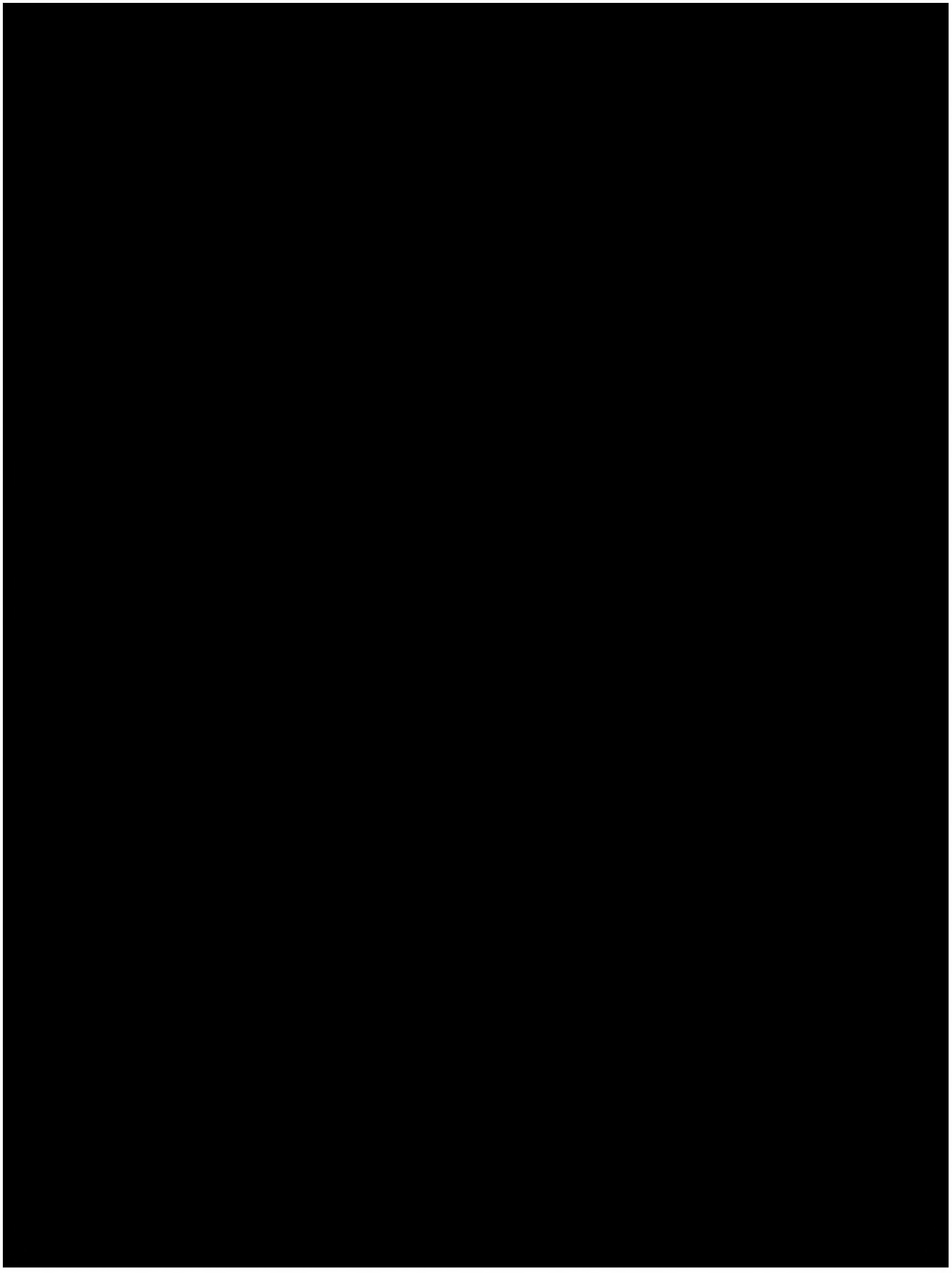


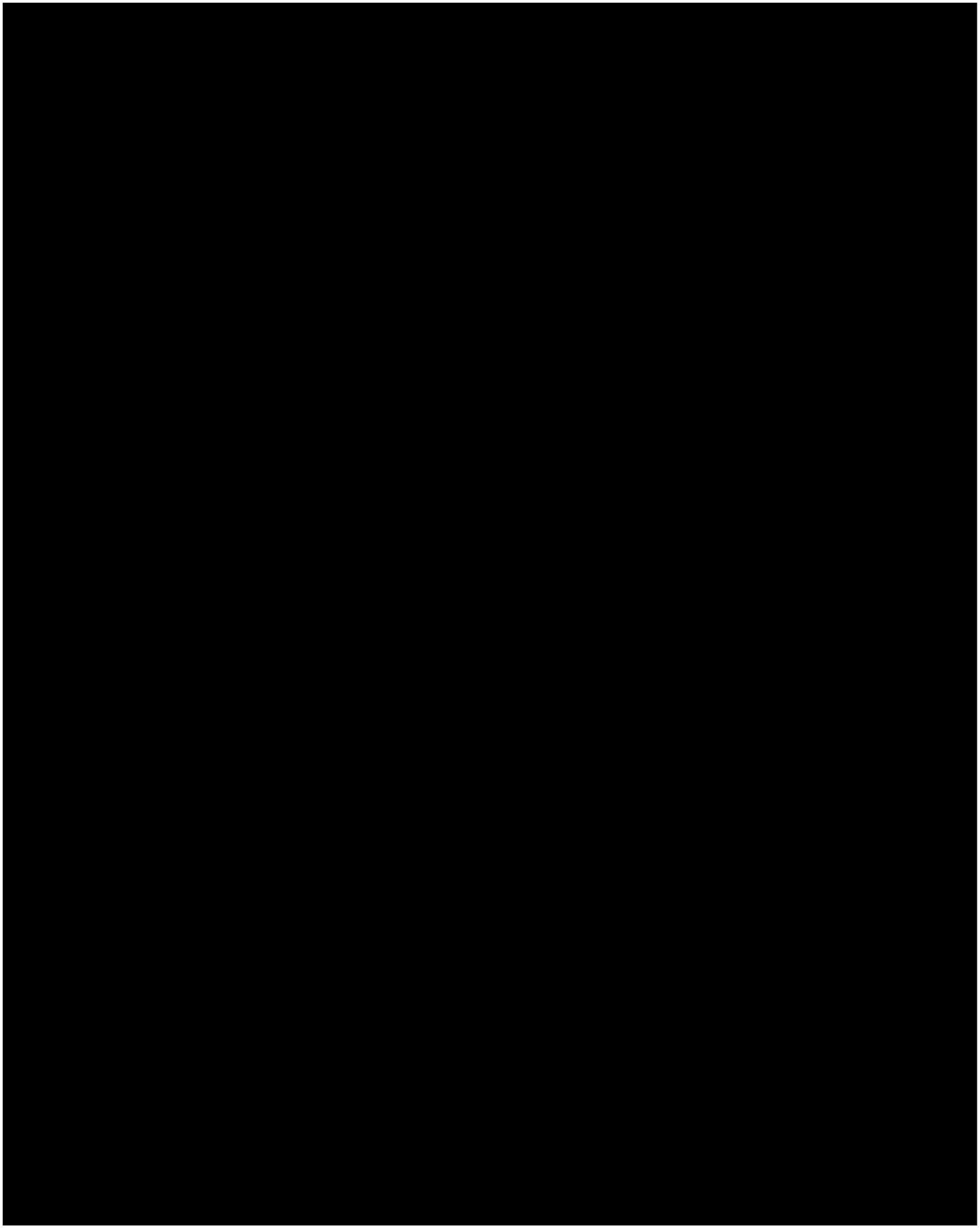


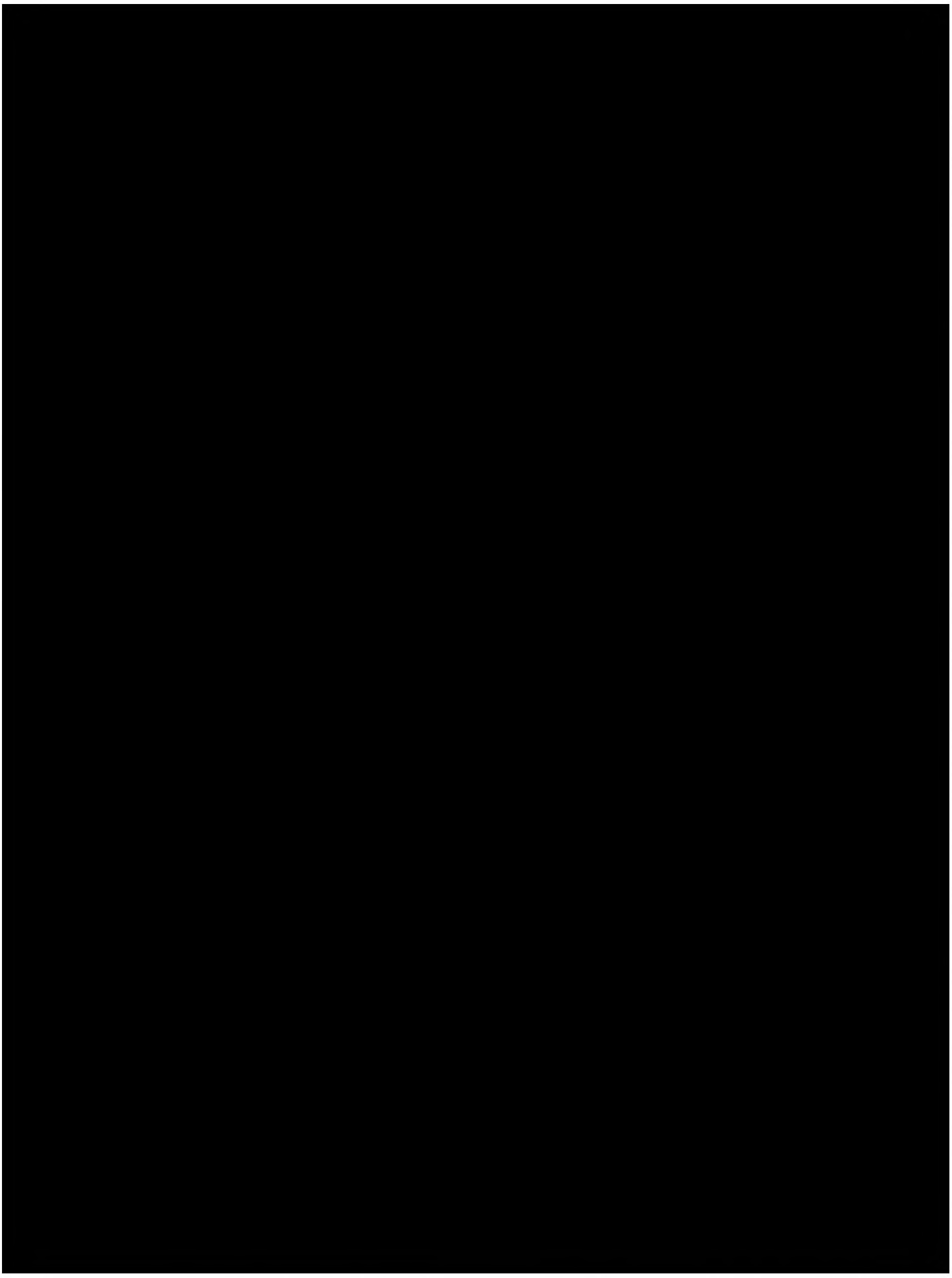


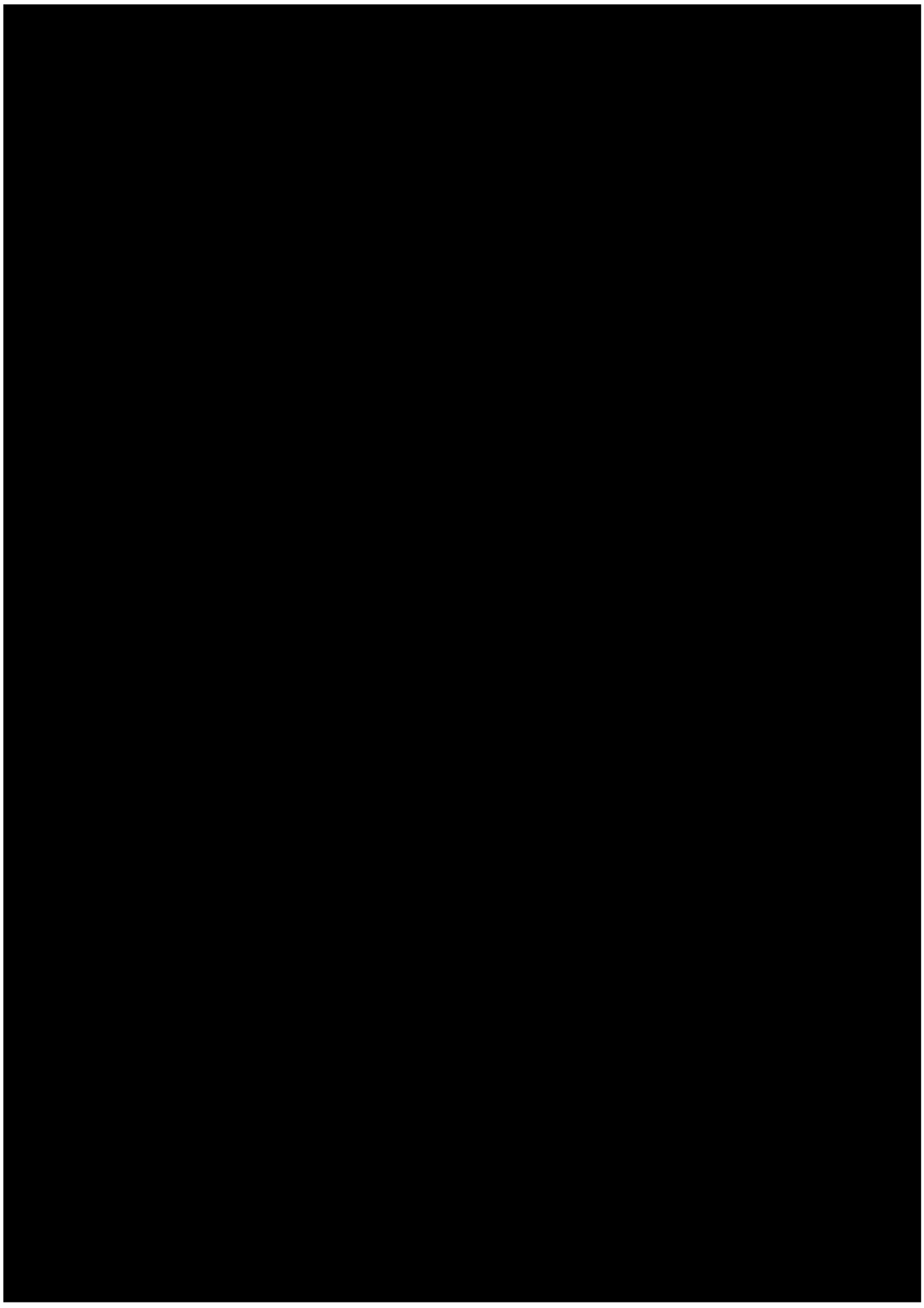


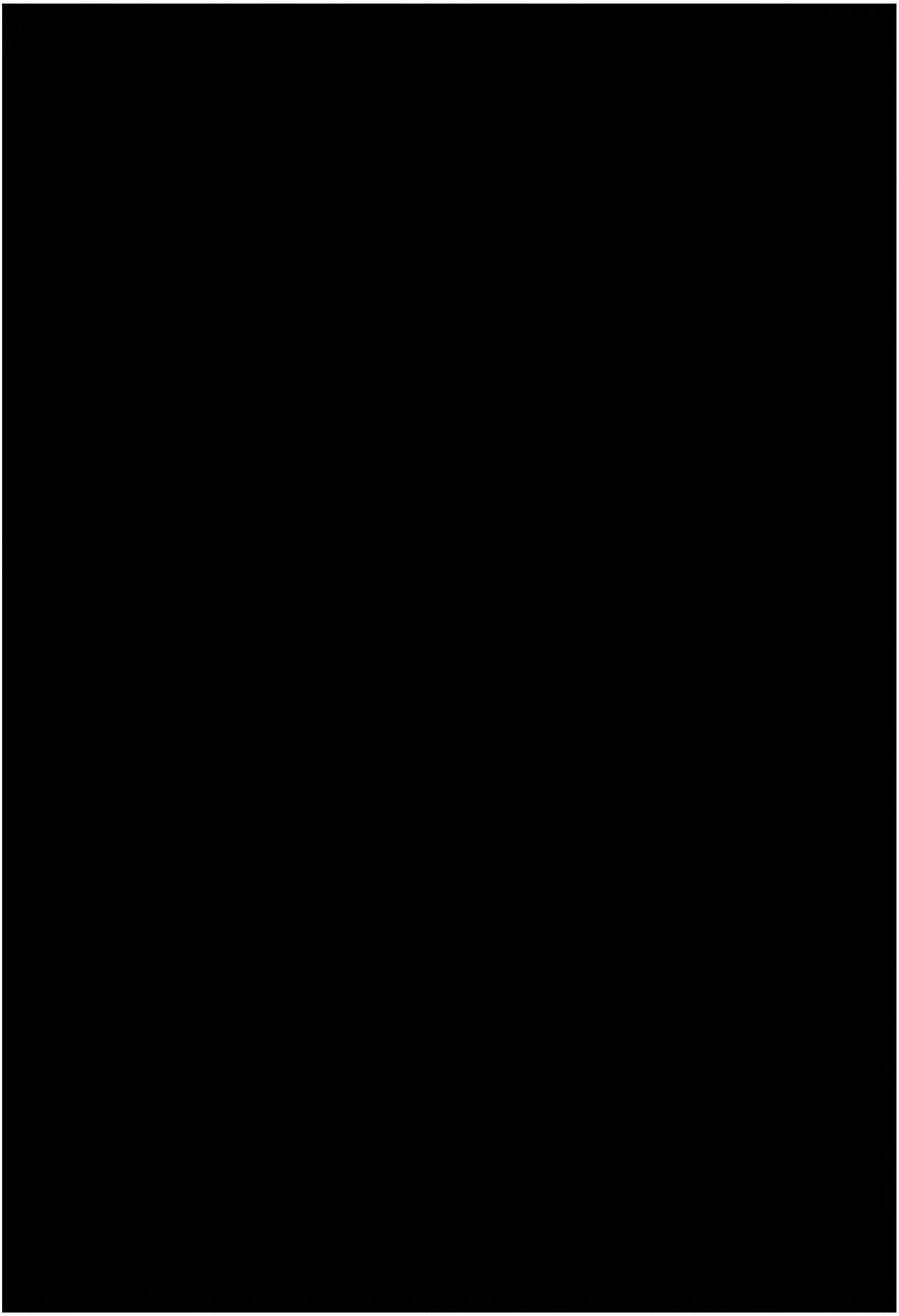


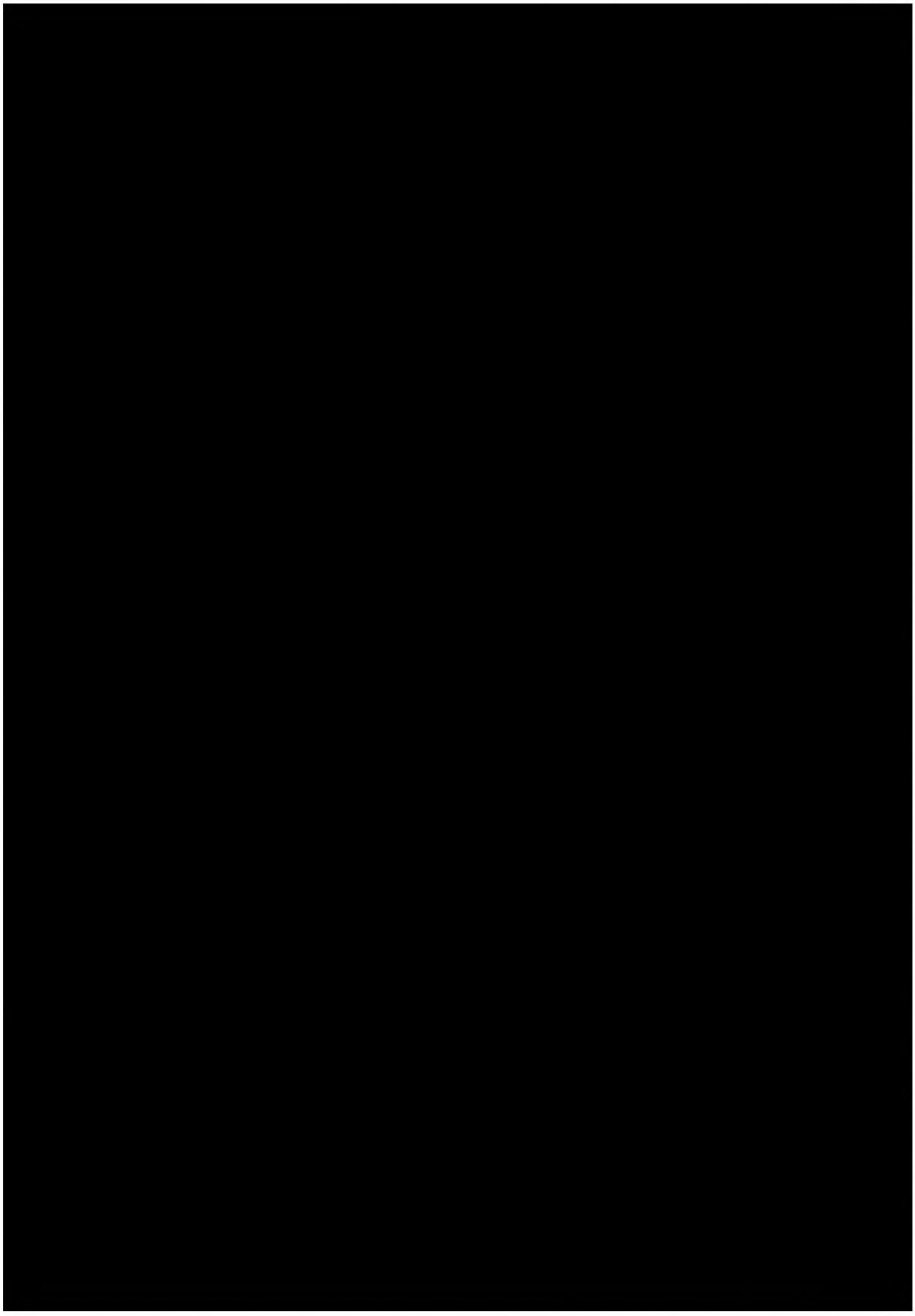


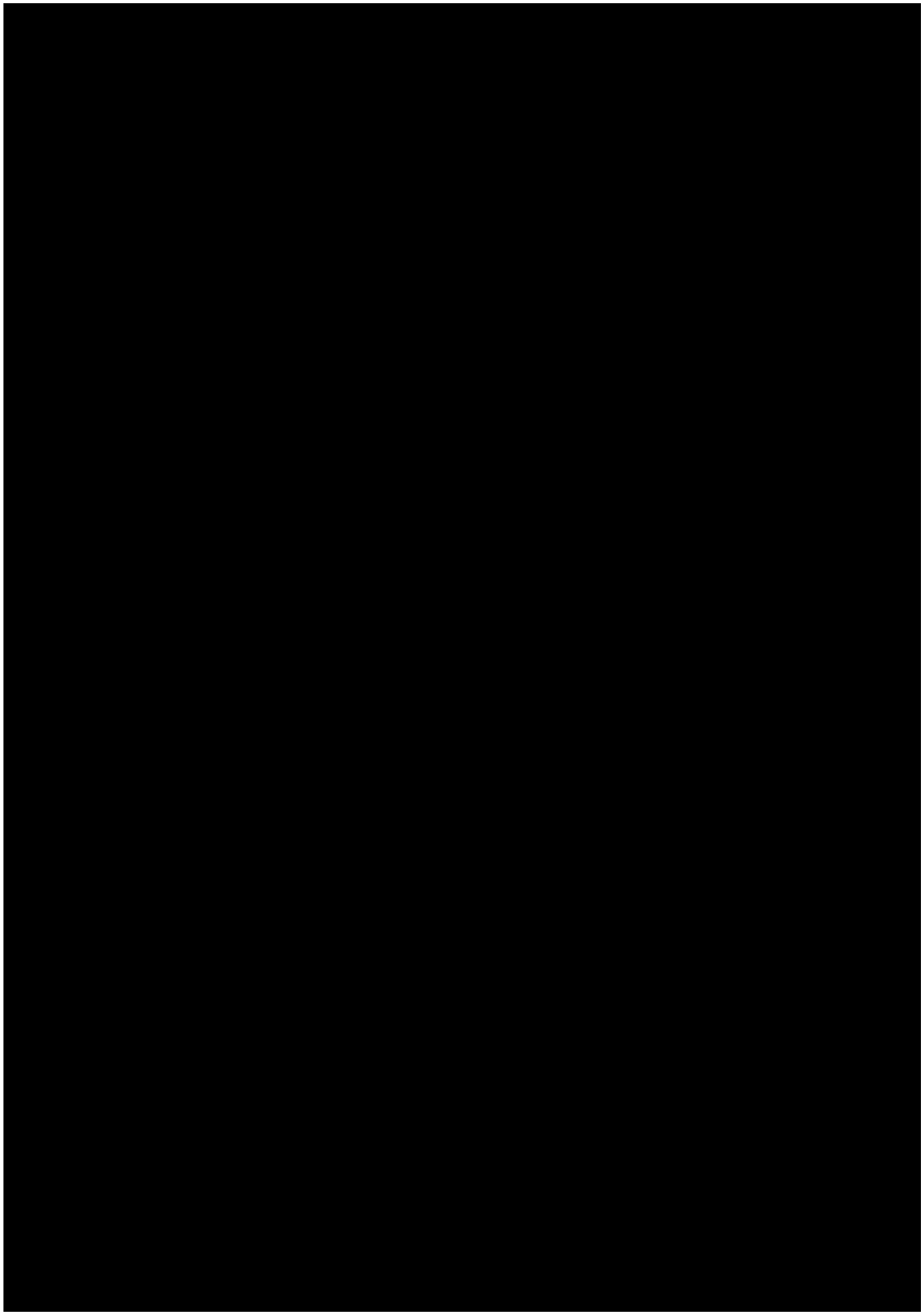


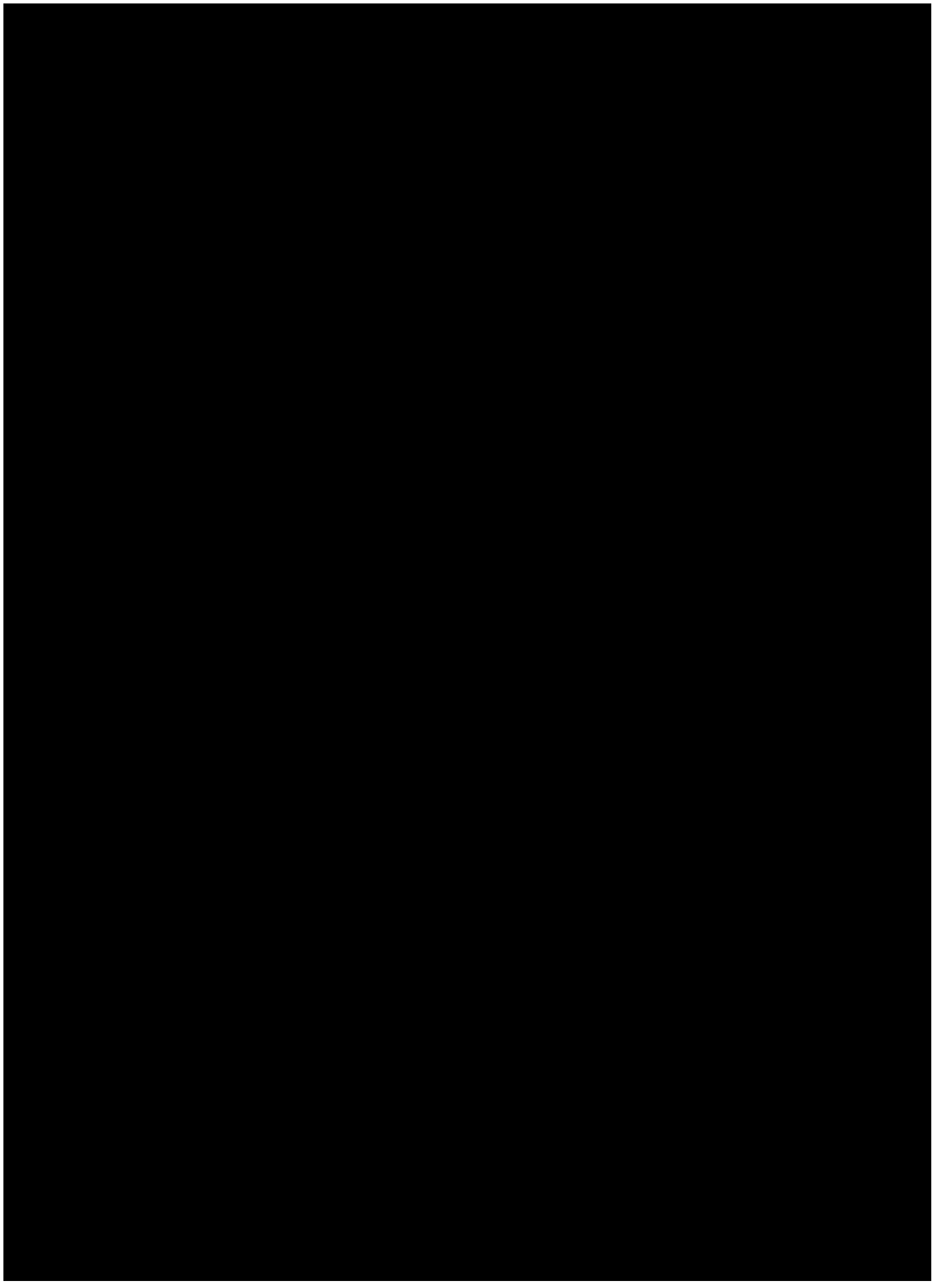


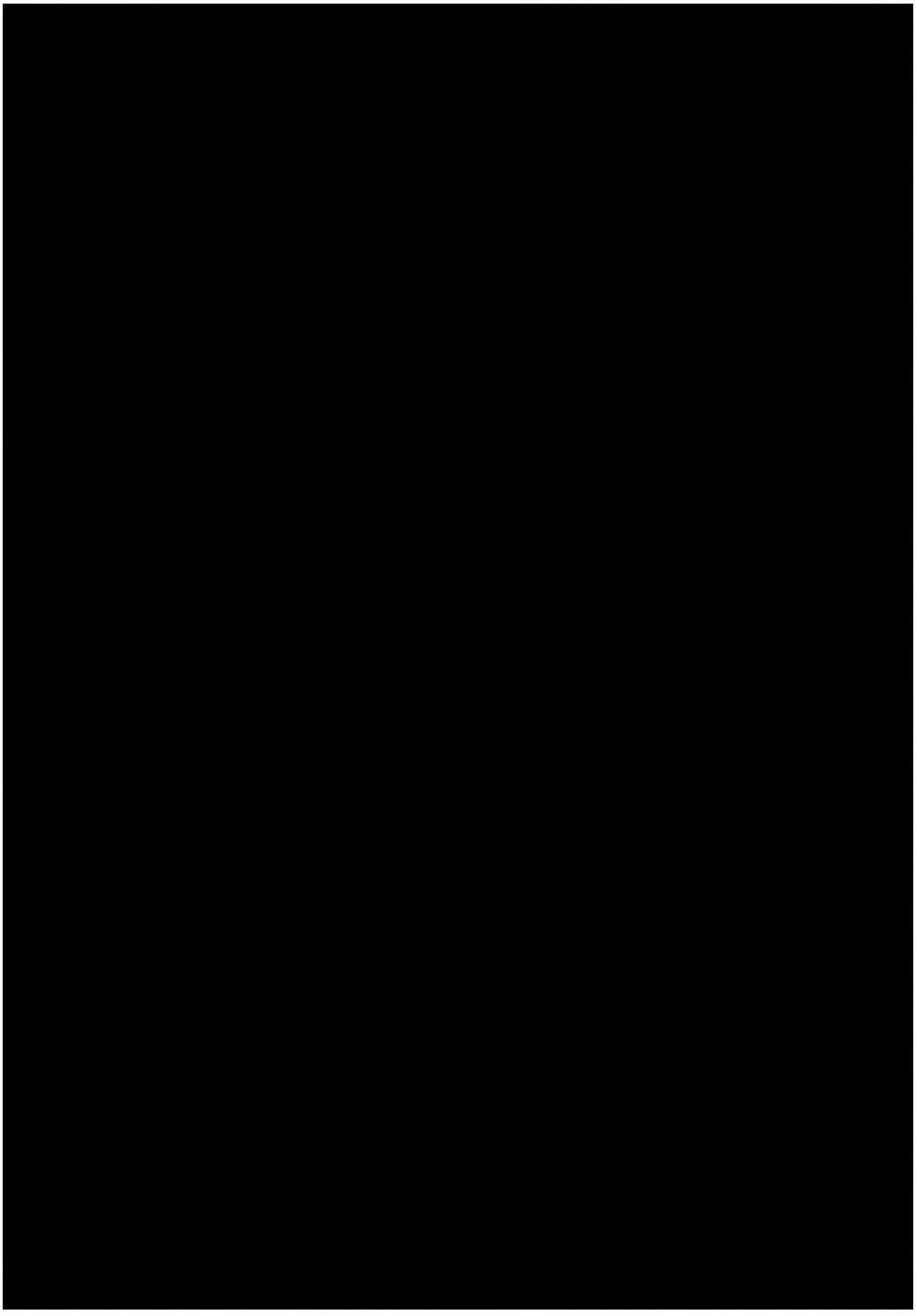


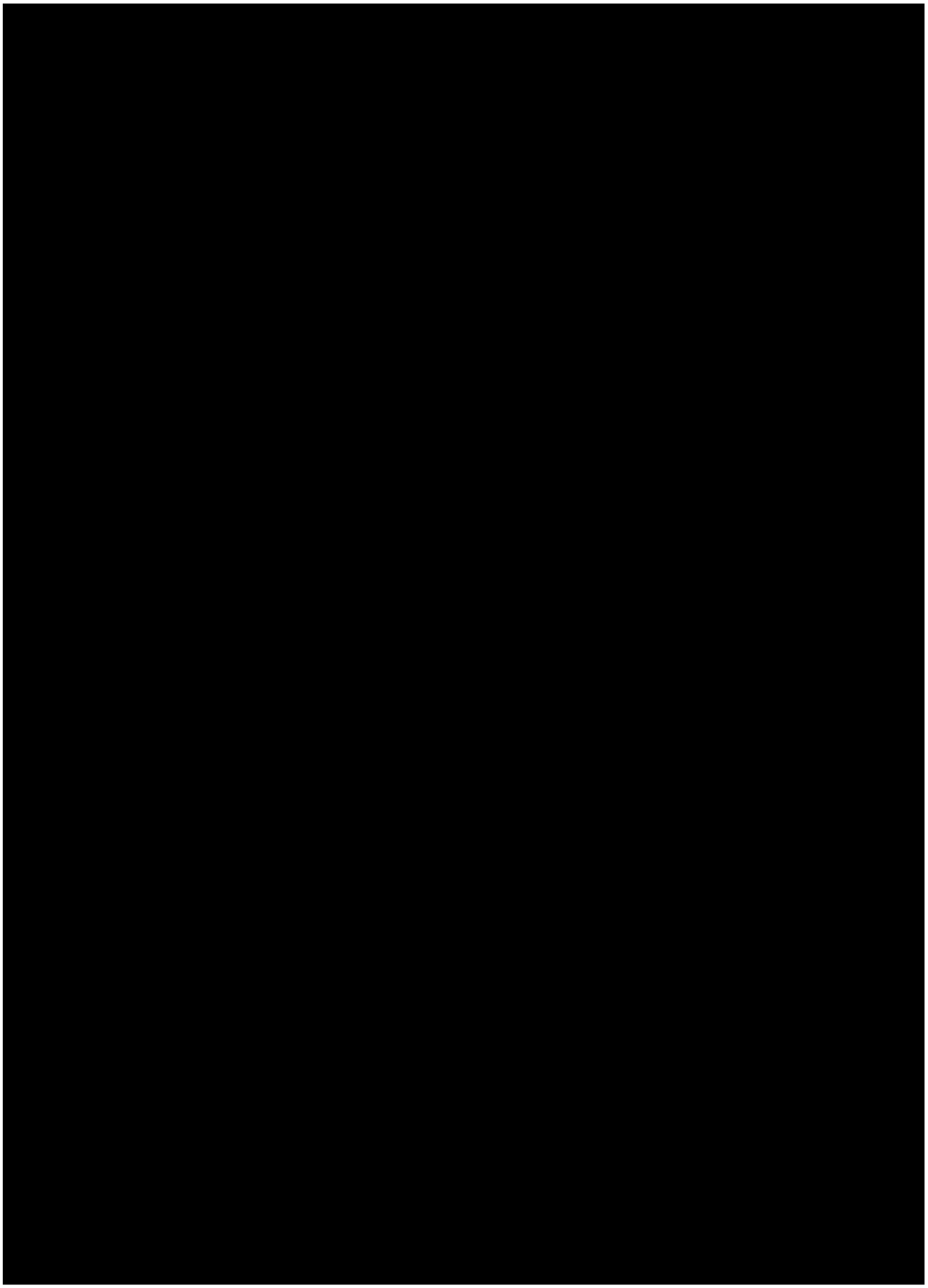


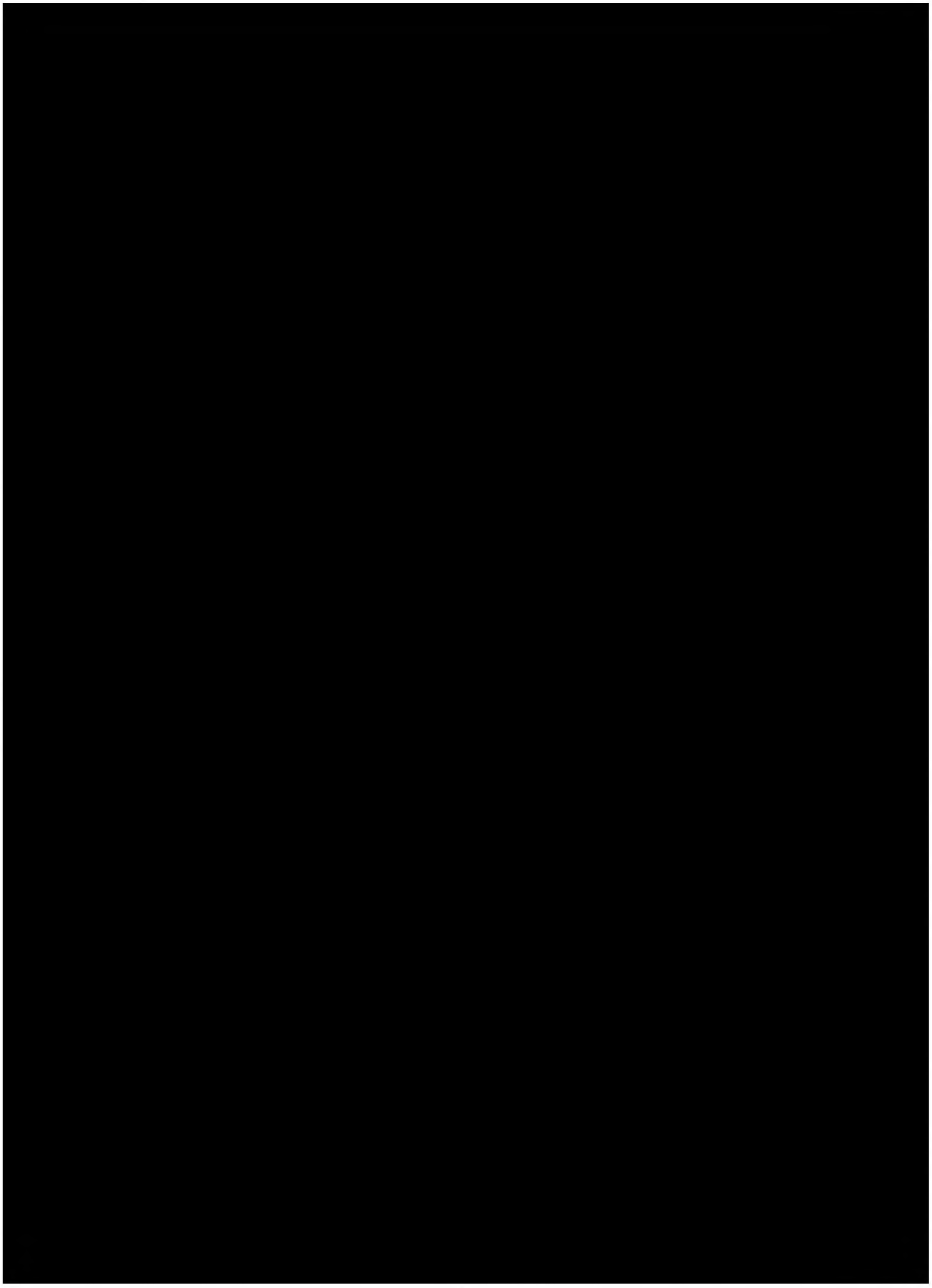


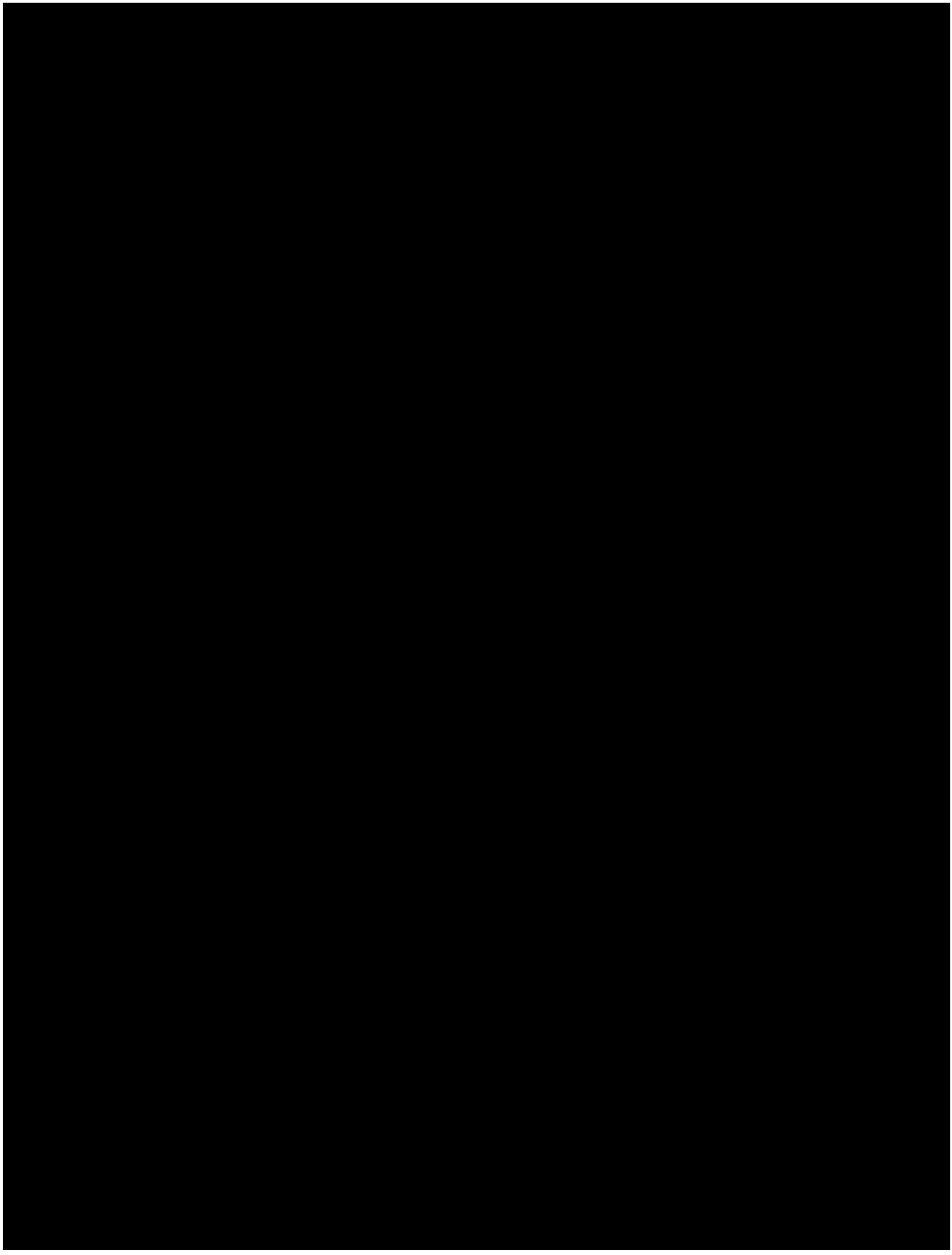


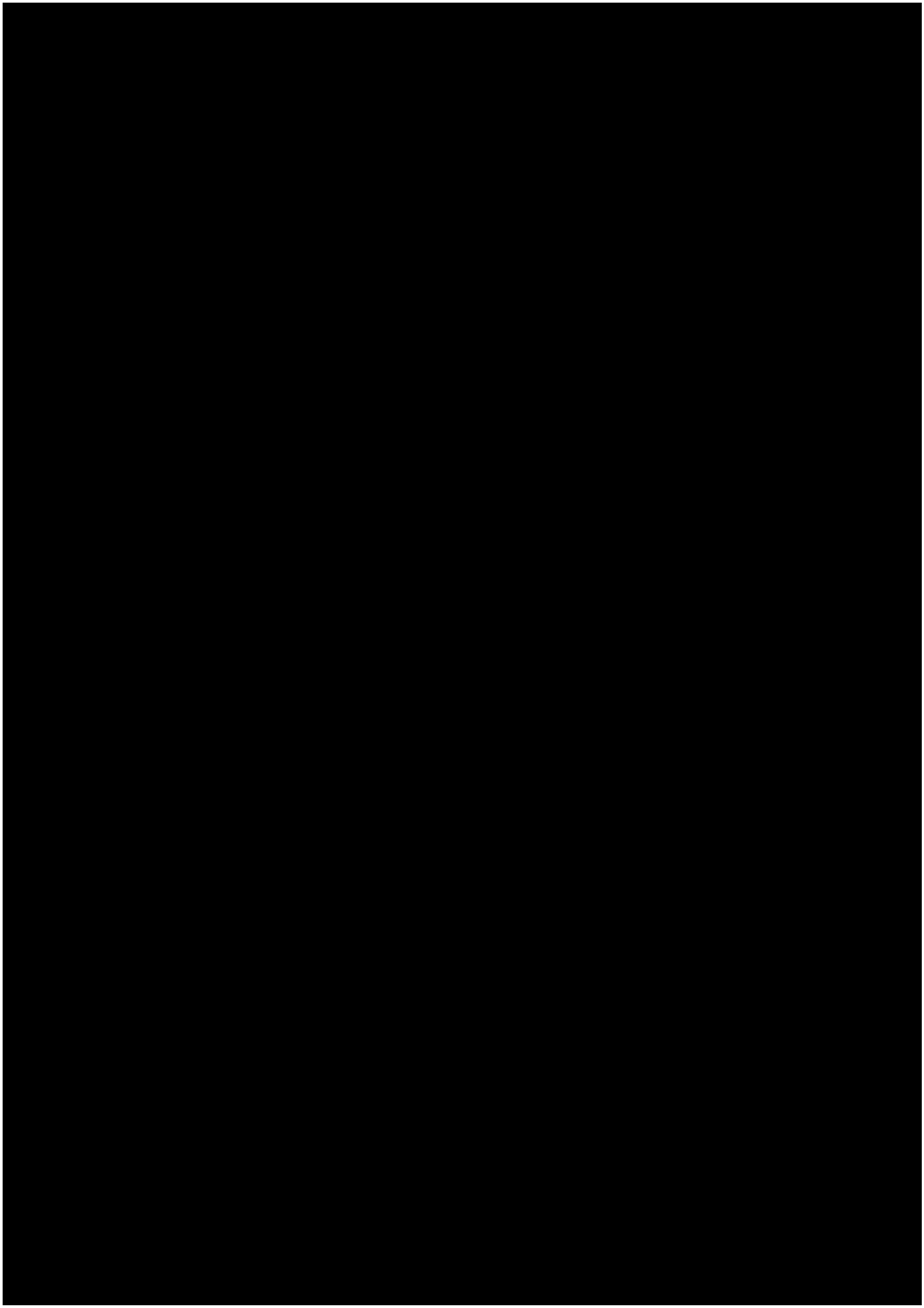


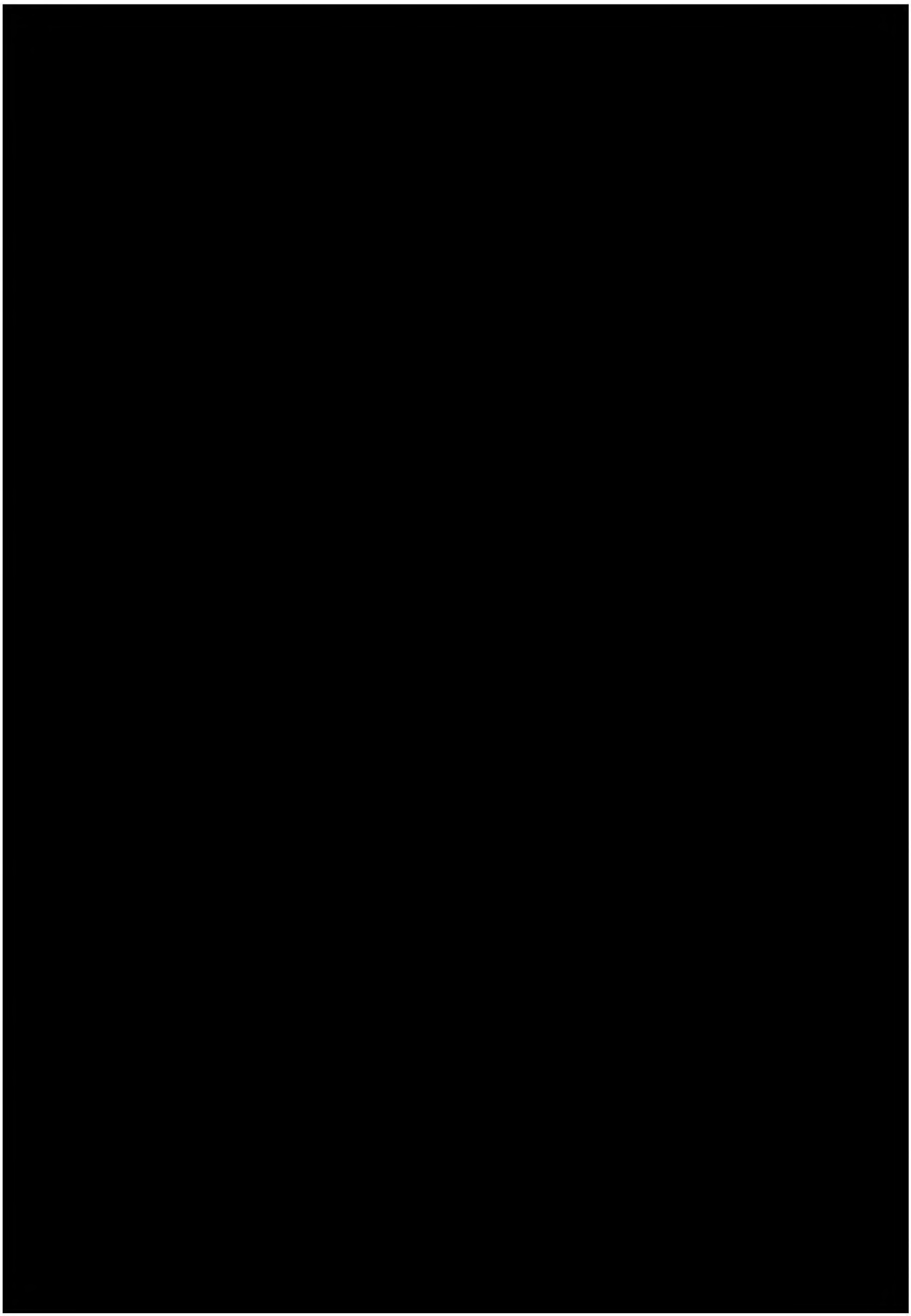


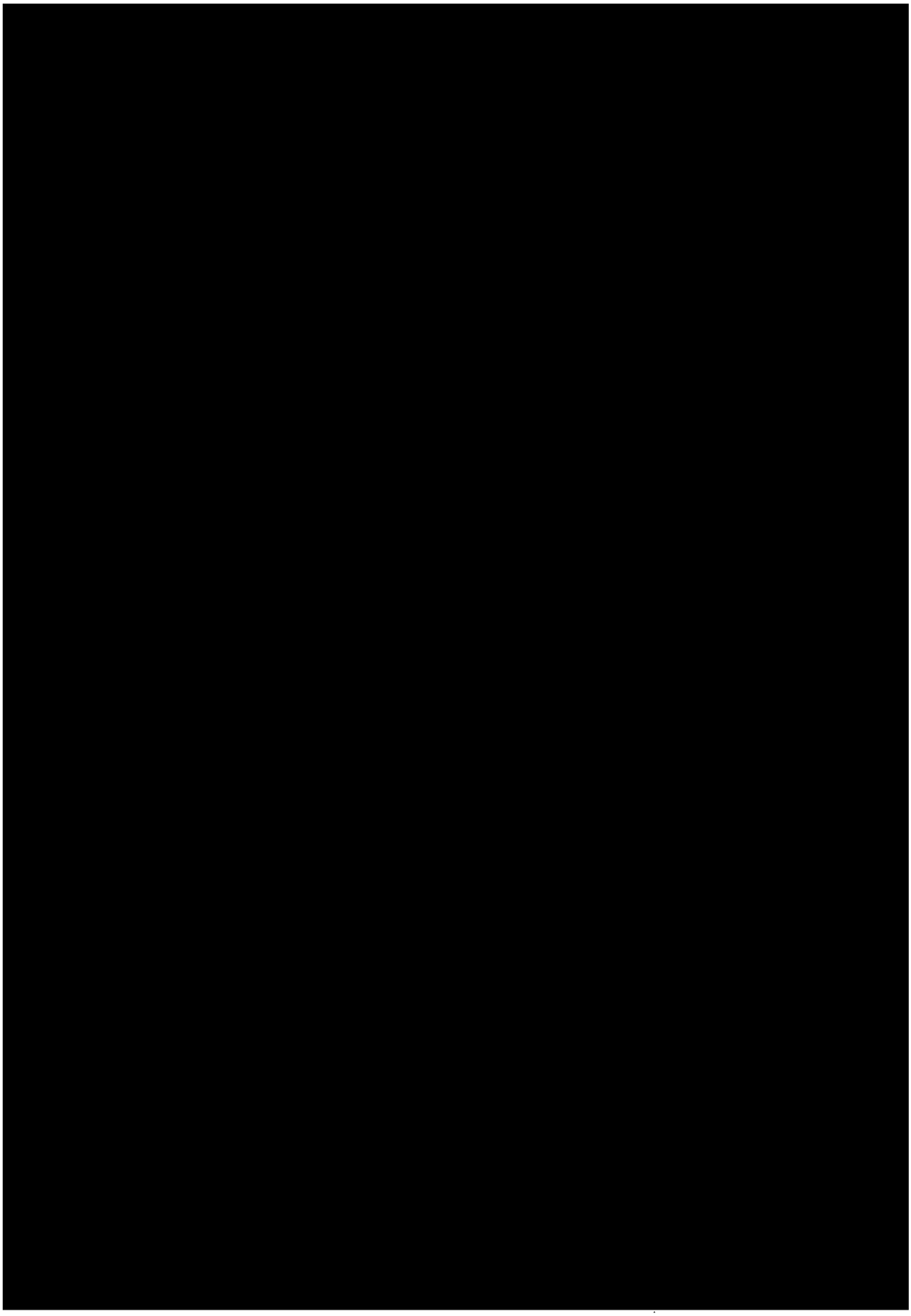


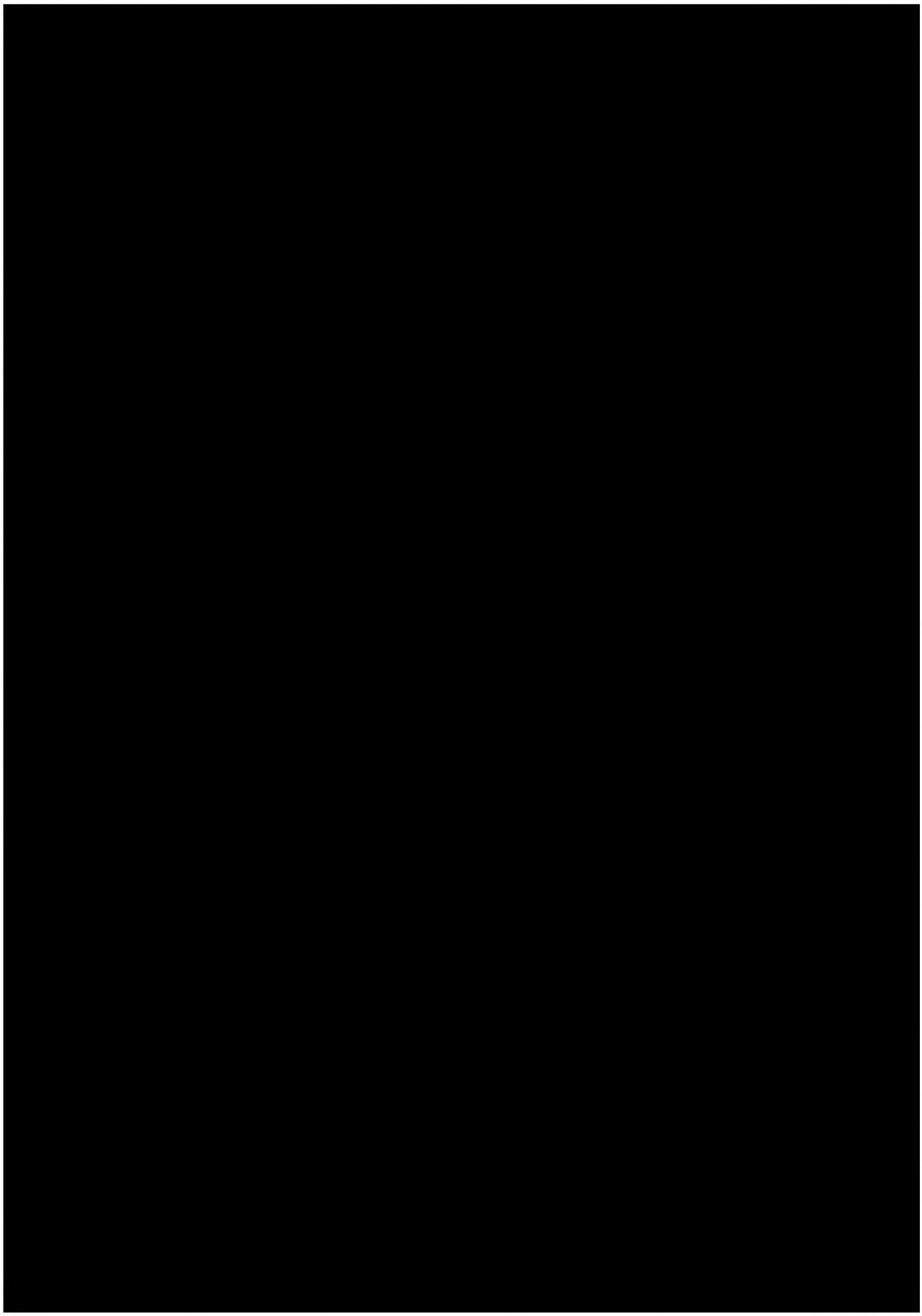


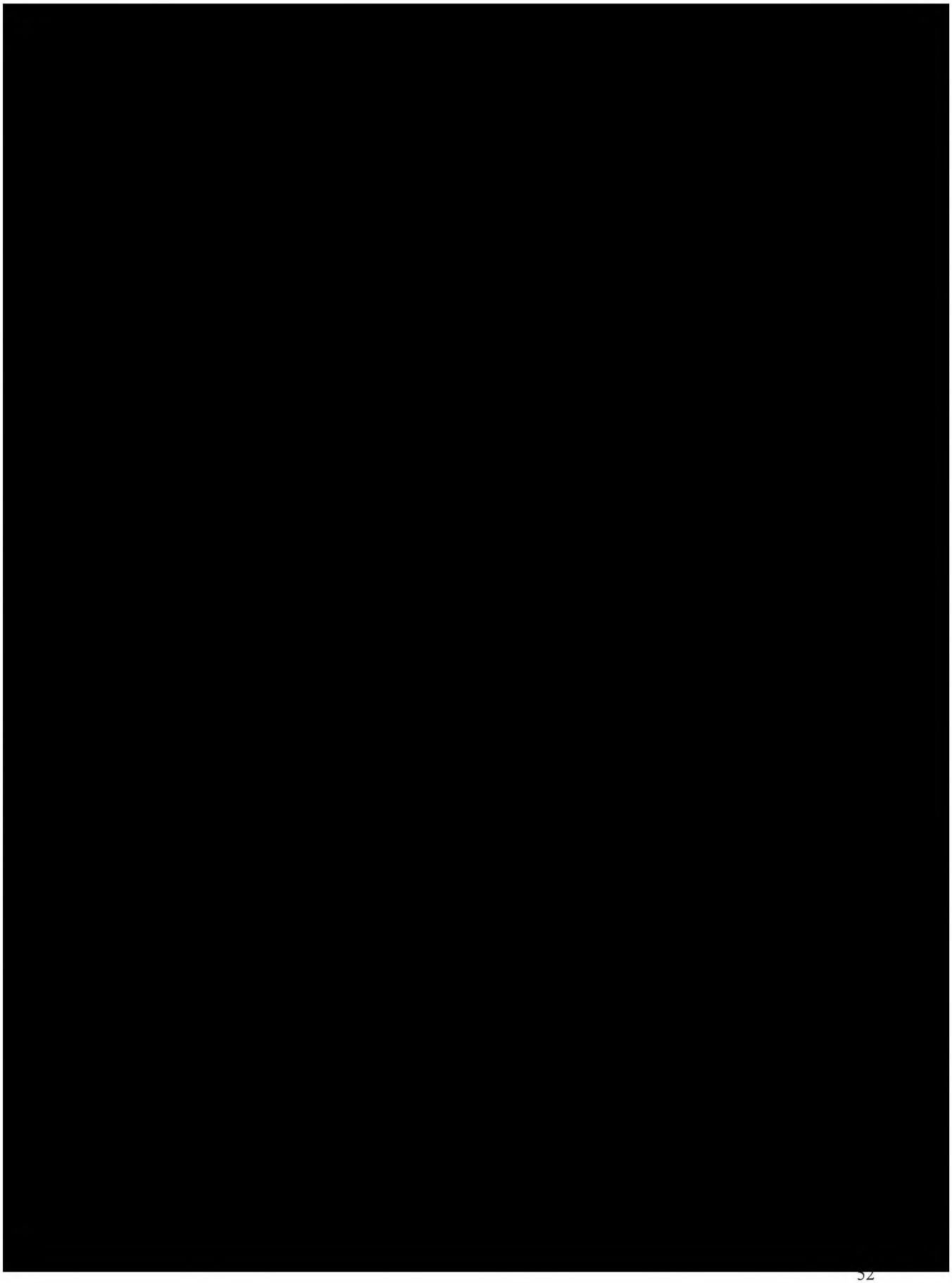


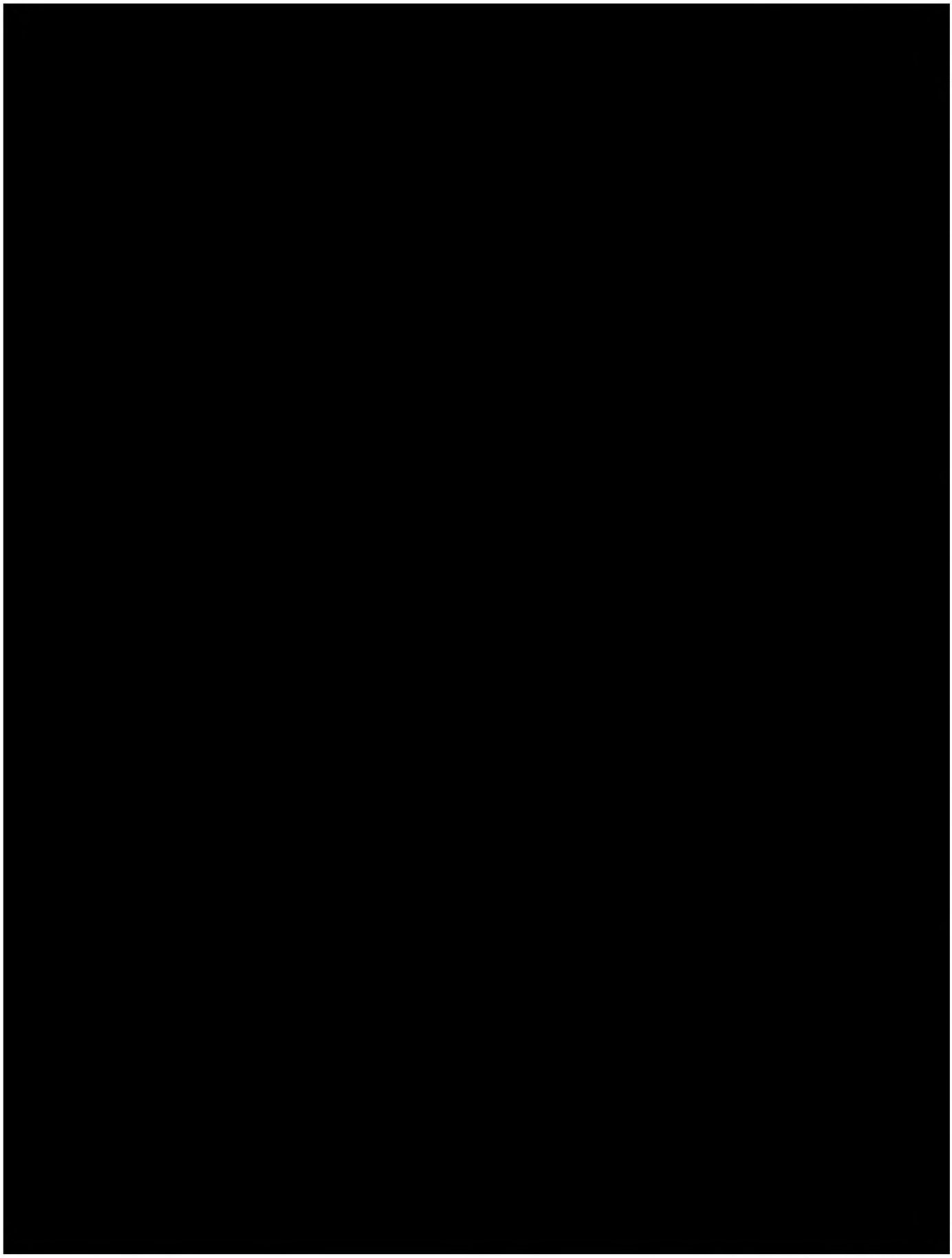












UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF MICHIGAN

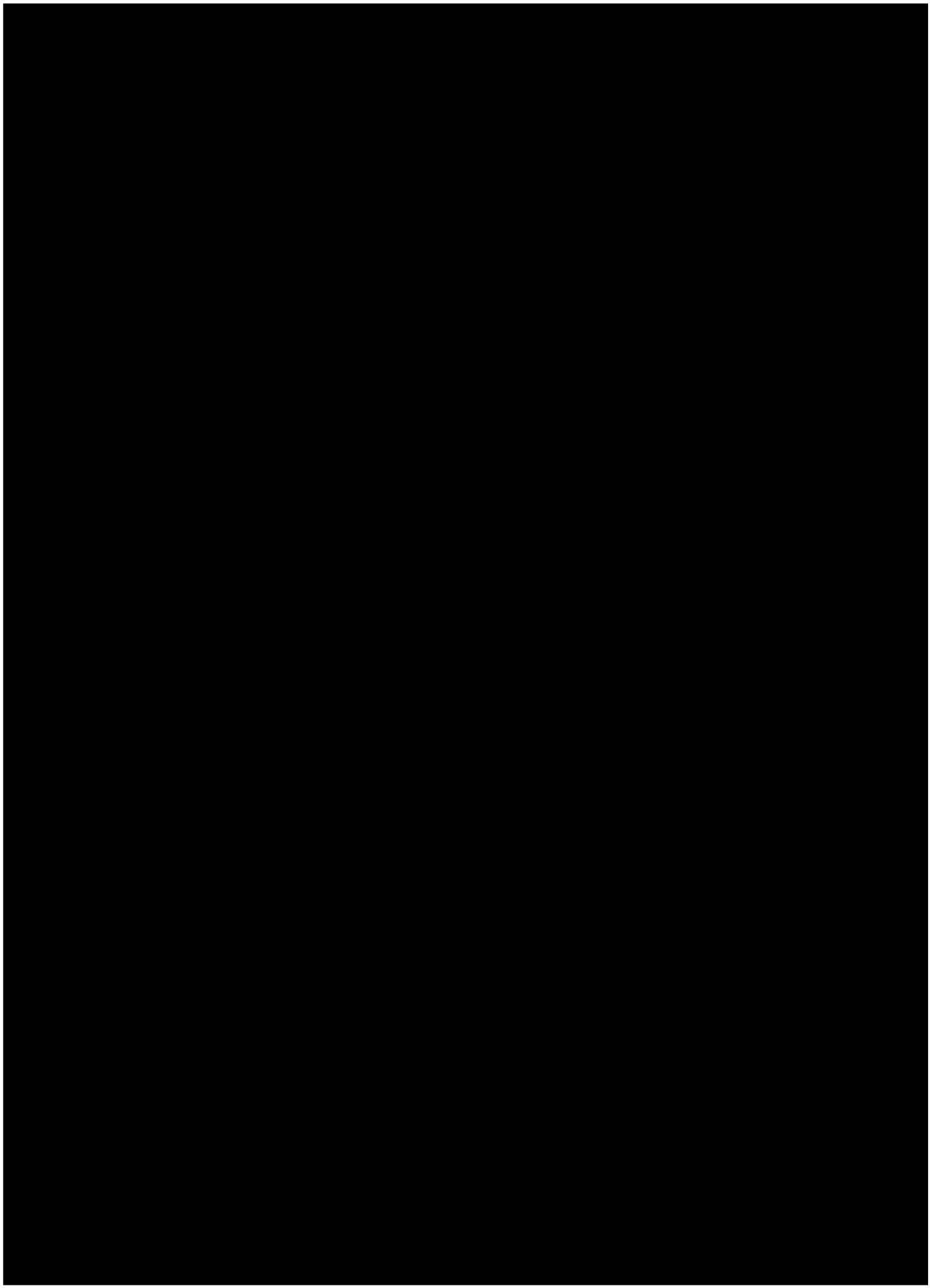
UNITED STATES OF AMERICA, Plaintiff, and NATURAL RESOURCES DEFENSE COUNCIL, INC. AND SIERRA CLUB, Intervenor-Plaintiffs, v. DTE ENERGY COMPANY AND DETROIT EDISON COMPANY, Defendants.	Civil Action No. 2:10-cv-13101-BAF-RSW Judge Bernard A. Friedman Magistrate Judge R. Steven Whalen

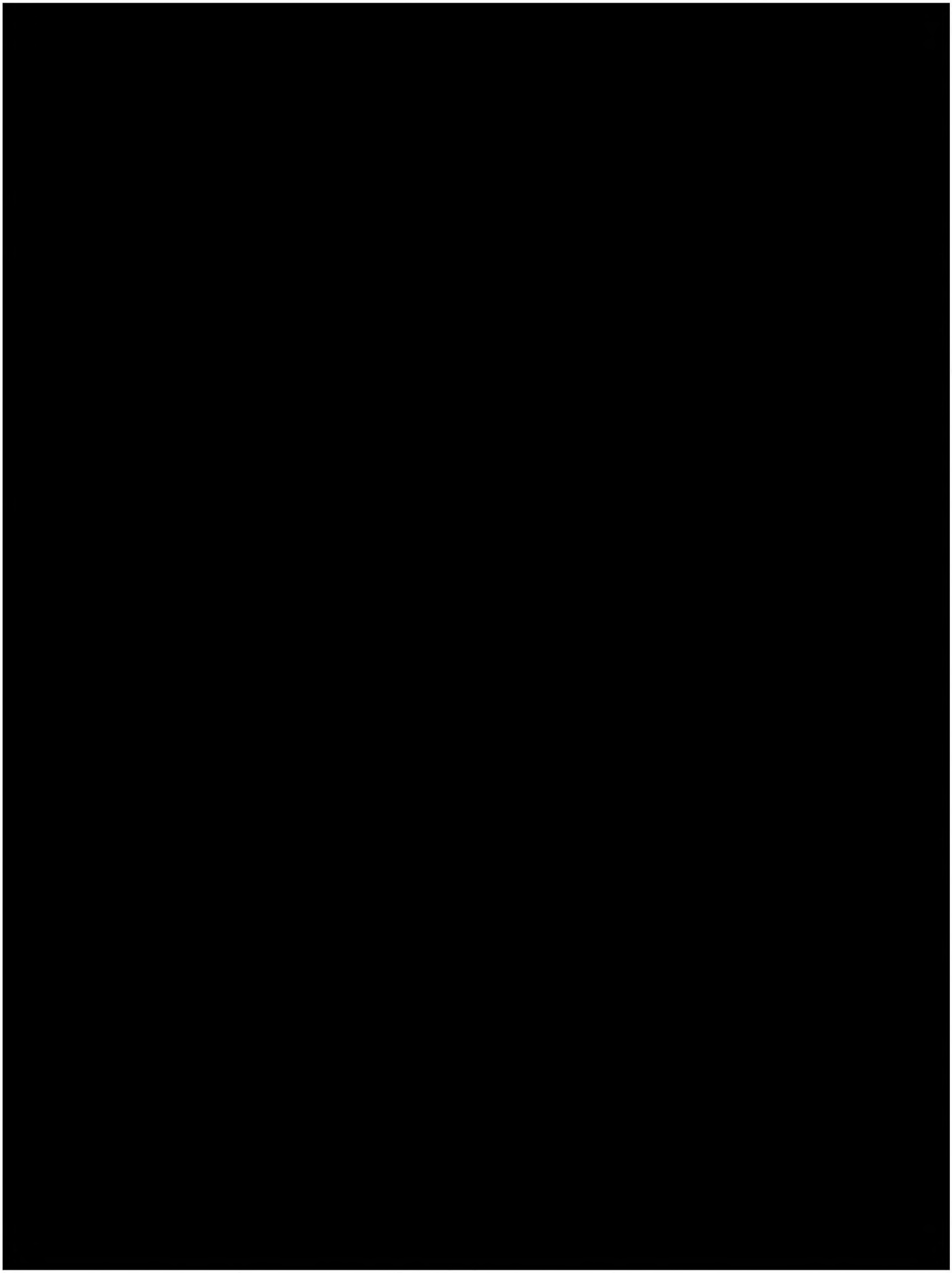
DEFENDANTS' MEMORANDUM OF LAW IN SUPPORT OF MOTION *IN LIMINE* TO EXCLUDE THE OPINIONS OF ROBERT H. KOPPE AND RANAJIT SAHU

FILED UNDER SEAL
CONFIDENTIAL/TRADE SECRET - SUBJECT TO PROTECTIVE ORDER

EXHIBIT 10

Deposition of Paul Fessler (June 8, 2011)





UNITED STATES DISTRICT COURT
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EXHIBIT 11

Rebuttal and Supplemental Expert Report of Robert H. Koppe (July 6, 2011)